MULTIMEDIA SPECIAL REPORT: CD-ROM ENCYCLOPEDIAS VS. THE WEB

INTERNET PHONES: LONG DISTANCE FOR FREE?

PC WORLD

June 1996

COMPLETE GUIDE TO WINDOWS UTILITIES

for Windows 95 and 3.1

PLUS Consumer Alert: How New Is Your New PC?

Best Windows Accelerators

Tips for Easy PC Faxing

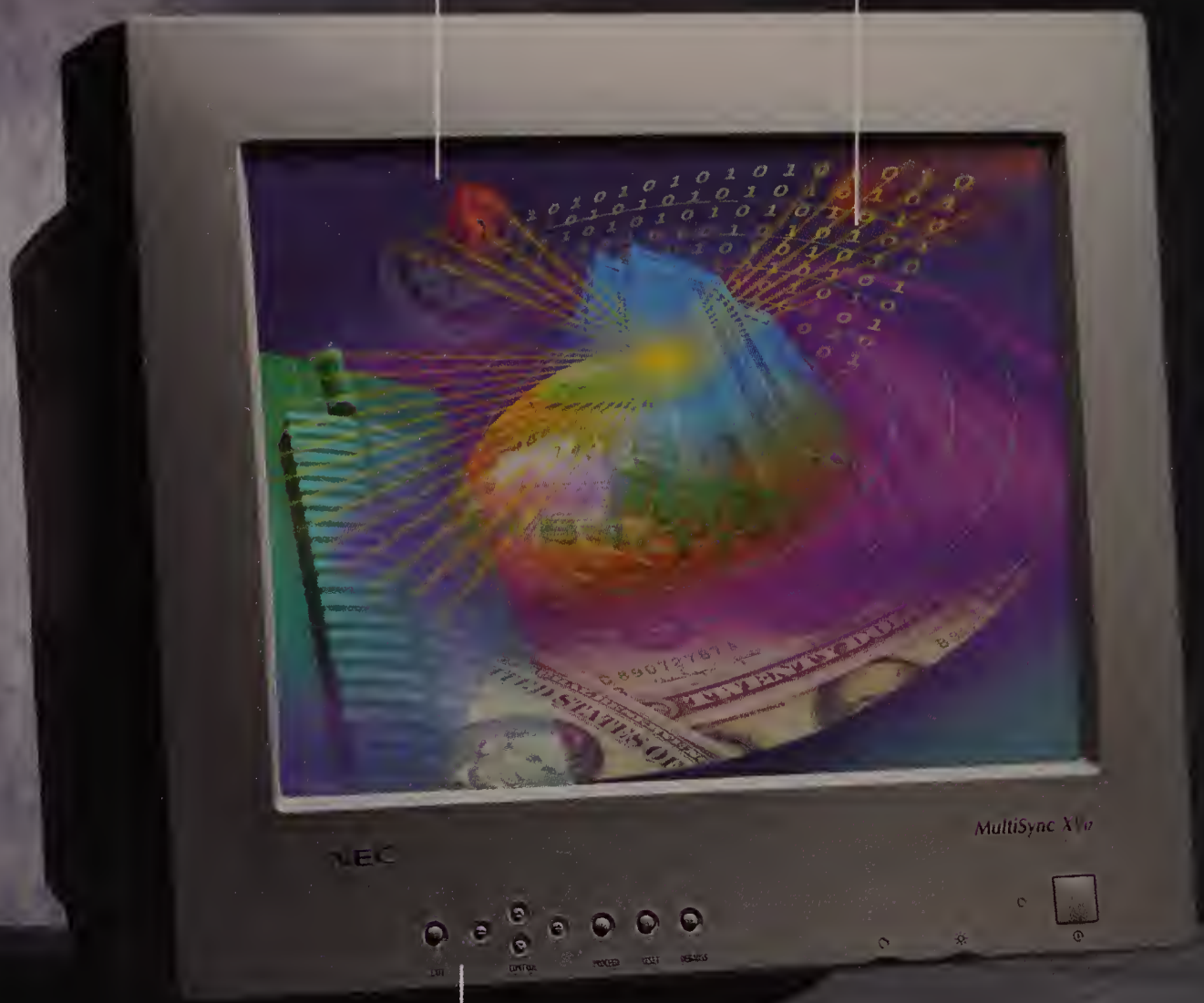
$4.95 USA $5.95 Canada Printed in USA
06
0 70989 37771 4

"...great picture quality, advanced features, and top-notch support... a superb monitor."

FamilyPC**

"...bright screen, superior on-screen controls and low price."

Windows*



MacUser†

"A tremendous bargain, with great, easy-to-use controls."

CRITICS CALLED IT "VIRTUALLY FLAWLESS."

Maybe the engineers at NEC were just being oversensitive. But when these "harsh" reviews came in, back to work they went. To improve upon a computer monitor already praised by the industry as being the best there is.

The result? NEC proudly introduces the MultiSync® XV+™ Series Monitors. Upgraded, refined, and with new features to give you more control over your screen and practically all monitor functions.

Both the MultiSync XV15+™ and the MultiSync XV17+™ boast the kind of superior screen performance needed to deliver the sharp detail, bright colors and crystal clear images that have long been synonymous with NEC monitors. Only now, you'll notice enhanced contrast and even less glare, thanks to our unique OptiClear™ screen surface.

Because front-mounted digital controls were so popular on the MultiSync XV17,™ we've added them to the MultiSync XV15+. So now both XV+ monitors allow for quick and easy image adjustments to size, position and screen geometry.

In addition to PC and Macintosh® compatibility, the MultiSync XV+ Series features Plug and Play compatibility for Windows® 95. Because the monitor can identify its key characteristics (screen size, resolution, etc.) directly to the computer, you'll not only enjoy optimized display performance but simplified installation as well.

MultiSync® XV15+™
15" Flat Square Technology CRT
(13.8" viewable image size)
Max. Res.: 1280 x 1024 NI at 60Hz
OptiClear Screen Surface
Front-mounted Digital Controls
Plug and Play Compatibility

MultiSync® XV17+™
17" Flat Square Technology CRT
(15.6" viewable image size)
Max. Res.: 1280 x 1024 NI at 60Hz
OptiClear Screen Surface
Front-mounted Digital Controls
Plug and Play Compatibility

Naturally, the MultiSync XV+ Series delivers the legendary quality and reliability that you've come to expect from NEC, and is backed by a 3-year limited warranty – one of the best in the industry.

The new MultiSync XV+ Series from NEC. It's a testament to our engineers' obsession with perfection. Not to mention their hypersensitivity to a little constructive criticism. To learn more about the new MultiSync XV+ Series, call 1-800-NEC-INFO. To have the information sent to you via fax, simply call 1-800-366-0476 and request catalog #1. Or contact us on the Internet at http://www.nec.com.

SEE, HEAR AND FEEL THE DIFFERENCE.™

NEC

Designed for Microsoft Windows 95

*Copyright ©1995 by CMP Publications, Inc. Reprinted from Windows Magazine with permission. **Quote reprinted with permission, FamilyPC Magazine, (June '95) Copyright 1995. †Reprinted from "MacUser," July 1995. Copyright ©1995 Ziff-Davis Publishing Company. MultiSync is a registered trademark and XV15+, XV17+, XV17, OptiClear and See, Hear and Feel the Difference are trademarks of NEC Technologies, Inc. Windows and the Windows 95 logo are registered trademarks of Microsoft Corporation. All other trademarks or registered trademarks are the property of their respective holders. GSA# GS00K94AGS5241PS01. ©1996 NEC Technologies, Inc.

Key #82031.

Circle 205 on reader service card

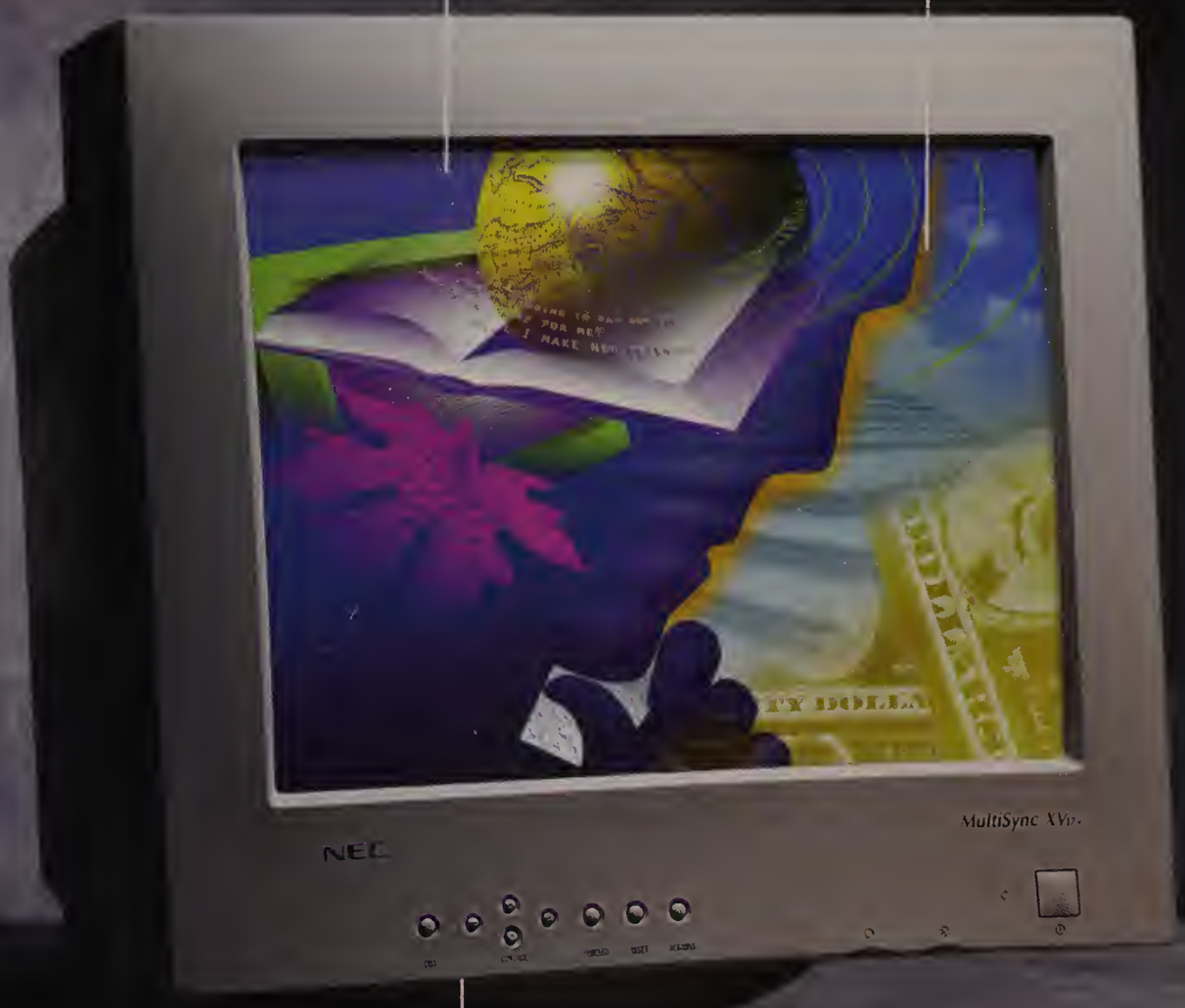
THAT SCATHING REVIEW LED US TO THESE IMPROVEMENTS.

Plug and Play Compatibility for Windows 95

Lets you simplify installation.

OptiClear Screen Surface

Enhances contrast while also eliminating glare.



Front-mounted digital controls on the MultiSync XV15+

Now both the XV15+ and XV17+ allow for quick and easy image adjustments.

Earl the printer sure is going to miss you.

Your days of running to Earl at all hours are over. Thanks to the Canon Convertible™ Color Printer, the MultiPASS™ C2500. It's the only way to bring home brilliant color Bubble Jet™ printing, plain paper faxing, copying and

scanning. All in one solid machine, backed by our 24-hour InstantExchange warranty program. It even has exclusive Canon® Creative software. So you and the kids can do lots of imaginative things. Want to know more? See our web site, http://www.ccsi.canon.com or call 1-800-848-4123, Ext. 444. Hey, you can still keep in touch with old Earl. Just send him a fax.

Canon

© 1996 Canon Computer Systems, Inc. Canon is a registered trademark and Bubble Jet, Convertible and MultiPASS are trademarks of Canon Inc. CCSI, 2995 Redhill Ave., Costa Mesa, CA 92626. In Canada, call 1-800-263-1121, Ext. 444.

THE WORLD'S BEST WORD PROCESSOR.

Can *your* word processor do this?

Rewrite incorrect sentences. Exclusive Grammatik® can, and you specify the style of writing involved.

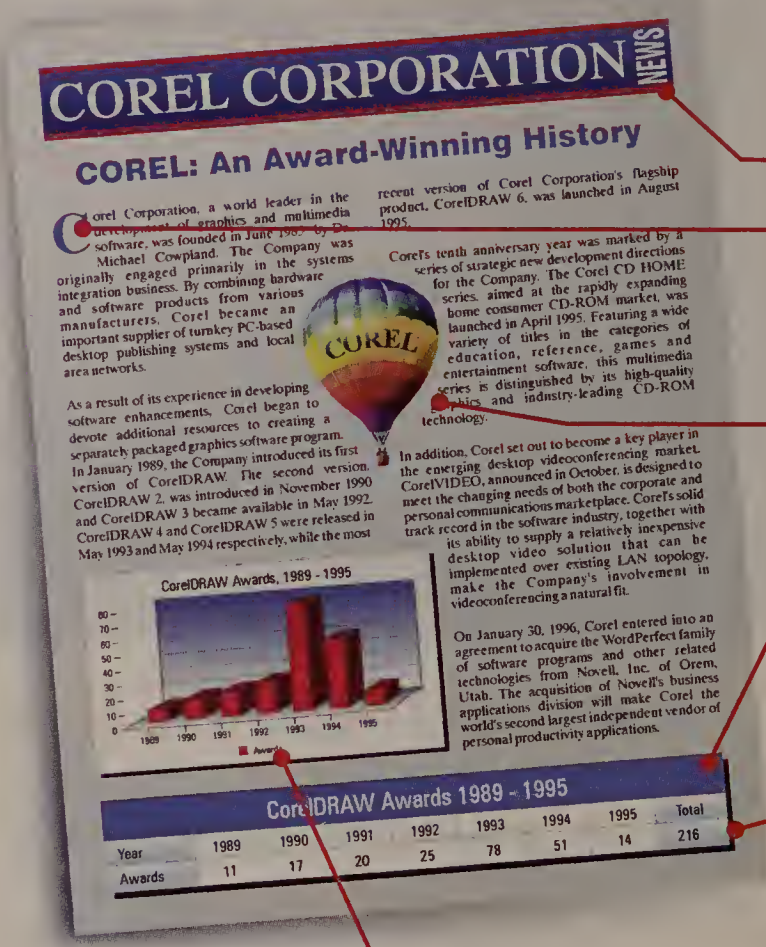
E-mail the document you're working on, without leaving WordPerfect.

Make your documents shorter—*or* longer. Exclusive Make It Fit™ can, and you control what formatting features are changed.

Not only make up an invoice, but calculate it as well. The Tables function can—with 98 spreadsheet functions available at a click.

Find any term in a file on any drive in a hurry. Exclusive QuickFinder™ can, with world-class speed and efficiency.

Move a project automatically from application to application within the suite. Exclusive QuickTasks™ can—and you can choose from more than 60 pre-built QuickTasks, or make your own.



Rotate text

Make a drop cap with one click—choose from 14 styles

Contour text around graphics—choose from 12 styles

Make great-looking tables—40 styles, unlimited options

Use 98 different formulas in your tables for spreadsheet-like performance

Create a chart from a table with one click

WordPerfect: A Multiplatform Winner

WordPerfect 6.1 beats Microsoft® Word for Windows® 95 for Editor's Choice.
PC Magazine, November 1995

WordPerfect 3.5 for Macintosh® beats Microsoft® Word for Macintosh® for *MacUser* 1995 Editor's Choice Award.
MacUser, December 1995

WordPerfect 6.1 for DOS receives Editor's Choice Award.
PC Magazine, November 1995

Corel is a registered trademark of Corel Corporation. Sidekick and Dashboard are trademarks of Starfish Software Inc. Paradox is a registered trademark of Borland International. Grammatik is a registered trademark and GroupWise and Envoy are trademarks of Novell, Inc. All other company and product names are trademarks or registered trademarks of their respective companies.

You use a word processor every day—shouldn't you use the best?

KUR-0227

*US$ plus applicable taxes.

http://www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080

OFFICE APPLICATIONS + GRAPHICS POWER + INTERNET CONNECTIVITY

NOW AN UNBEATABLE SUITE.

$289.99* Full CD-ROM version

$99.99* Competitive upgrade CD-ROM version

The NEW Corel® WordPerfect® Suite on CD-ROM† includes:

- Corel WordPerfect 6.1, the best word processor in the world, helps you do more things faster and easier than Microsoft® Word
- Corel Quattro® Pro 6.0, the most versatile spreadsheet at any price
- Corel Presentations™ 3.0, the easy-to-use presentation graphics package
- The best integration anywhere
- CorelFLOW™ 2
- Sidekick™ 2.0
- Dashboard™ 3.0
- Envoy™ 1.0
- 150 fonts
- 10,000 clipart images

$499.99* Full CD-ROM version

$259.99* Competitive upgrade CD-ROM version

- Includes everything in the Corel WordPerfect Suite, plus GroupWise™ 4.1 E-mail client license and Paradox® 5.0 database
- More feature-rich, productivity-enhancing programs than any other standard or professional office suite on the market

$69.99* Full CD-ROM version

- The only spreadsheet that seamlessly uses files from all three major spreadsheet programs: Quattro Pro, Microsoft® Excel and Lotus 1-2-3®
- The most powerful function set in a major spreadsheet
- Built-in graphics and presentation modules

$69.99* Full CD-ROM version

- Easy, powerful presentations in minutes, with sophisticated transitions, sound and more

"Presentations...is the best buy overall. We gave Presentations an Analyst's Choice based on its outstanding ease of use, superior text and graphics handling, and a wide range of communication protocols."

PC Week, February 1995

†3.5 inch disks and CD-ROM version also available. CD-ROM required to access full set of applications, fonts and clipart. 3.5 inch disks contain Corel WordPerfect 6.1 module.

Circle 70 on reader service card

PC WORLD

Cover Story

96 Complete Guide to Windows Utilities
Who thinks Windows 95 has everything you'll ever need? Not us. We tested utilities that come with Windows 95 and stacked them up against third-party tools and add-ons. Our conclusion: Not all the best things in life come with Win 95. Plus essential Windows 3.1 utilities.

- **98** Disk compression
- **99** Uninstallers
- **100** Windows 3.1 utilities
- **101** Memory managers
- **102** Antivirus software
- **106** Defraggers
- **108** Diagnostics
- **108** File management tools
- **114** Recovery

Special Report: Multimedia

235 Just the Facts: CD-ROMs vs. the Internet
What's the best place to find the answer to a question on business, history, or language? We found that the best bets run the gamut from low-price CD-ROM encyclopedias to sites on the World Wide Web.

Cover photography by Marc Simon; digital composition by DPI

Consumer Issues

120 How New Is Your New PC?
Are there used parts in your new PC, such as reconditioned hard drives, graphics boards, or monitors? *PC World*'s consumer writer reveals that the practice of component recycling among PC vendors is more common than you think. What's the best way to protect yourself? Know what you're getting.

PC Faxing Tips

141 Fax to the Max
Faxing from your Windows PC should be as easy as feeding paper documents through a regular fax machine—but it's not. Here's how to fax, step-by-step, from cover sheets to automated sending and receiving.

Safe Computing

149 Hands-On Guide to No-Pain Computing
Bad working habits at your computer can lead to debilitating long-term physical injuries. Here are easy ergonomic strategies you can adopt now to stay pain-free and productive.

Top of the News

46 Internet Phones No Match for Ma Bell
"Free" long-distance calls over the Web hurt by bad sound and tough installation.

50 Anniversary PC Owners Fight Gateway
Problems turn Gateway's 10th anniversary PC into a bust with customers.

52 HP Workgroup Lasers Hit New Low Price
LaserJet 5s for LANs start below $1300.

54 Corel Pumps Up WordPerfect Suite
An attractive suite is enriched with more programs and Internet features.

56 Will Families Say Wow?
CompuServe's Wow for home PC novices.

58 Microsoft Blueprint for a Simpler PC
Initiative for easy-to-upgrade systems.

VOLUME 14
NUMBER 6

p. 120

Top 20 PCs

162 Best of the Brands
Dell and Micron desktops grab the lion's share of Best Buys, despite new Packard Bell P-166 and P-150 minitowers that look like deals—but aren't. This month's chart toppers: the Dell Dimension XPS P133c and P100c, the Dell Latitude LX 4100D, and the Win-Book XP5 P120.

Top 10 Hardware

211 Top 10 Personal Printers
Top picks from HP—a 600-dpi color ink jet for $389 and a 300-dpi model for $309.

215 Top 10 15-Inch Monitors
Mitsubishi and NEC business-class monitors debut at the top.

217 Top 10 Modems
Latest Microcom DeskPorte costs $159.

220 Graphics Boards: Speeding Down Highway 95
This isn't your old graphics board anymore. With more business apps using graphics and multimedia, finding the best graphics board is essential. We put 18 of them through our demanding new Win 95 benchmarks to find the latest Top 10.

Reliability & Service Monitor

208 Win an NEC PowerMate P-133 PC
How satisfied are you with your PC? Fax in this survey for a chance to win an NEC PowerMate P-133, a Best Buy computer from this month's Top 20 charts.

p. 220

Here's How

248 Help Line
252 Spreadsheets
256 Word Processing
260 Windows
266 Data Management
270 Online
278 Hardware

Departments

21 In This Issue
25 Letters
31 Real Problems, Real Solutions
43 Full Disclosure

Resources

14 How to Contact PC World
272 Coming Up
284 PC World Catalog
296 Mail-Order Shopping Guide
313 Reader Service Card
315 Advertiser Index
317 Editorial Product Index

PC WORLD online Access PC World Online via America Online, CompuServe, Microsoft Network, Prodigy, or the World Wide Web (http://www.pcworld.com).

New Products

63 Canon Innova Media MT 9600, NEC Ready 9619 Pentium-166 PCs
64 NEC SuperScript 860
64 IBM ThinkPad 365e, 365x notebooks
66 Iomega Ditto Easy 3200 backup drive
66 HP SureStore 1300A, 2000A
68 miroVideo DC20
68 Diamond Stealth64 Video 2201TV, Diamond Stealth 3D 2000 boards
70 OmniPage Pro for Windows 95, TextBridge Pro 96 OCR packages
72 Interleaf 6 Windows 95 publishing software
72 Corel Web.Data 6.0 Web database publishing tool
74 Smart Marketing Suite
74 ProcessModel 2.0
78 WebAble resource site
78 P/E—Interactive Research for the Serious Investor CD-ROM
82 cc:Mail release 6.0
82 Instant Internet 3.0
84 28.8 Communicator With SimpleJack fax-modem
84 AirCommunicator Lite
86 Quick Takes

PC World @Home

320 Consumer Watch
Online buyer beware—tips to keep from getting scammed on the Internet.

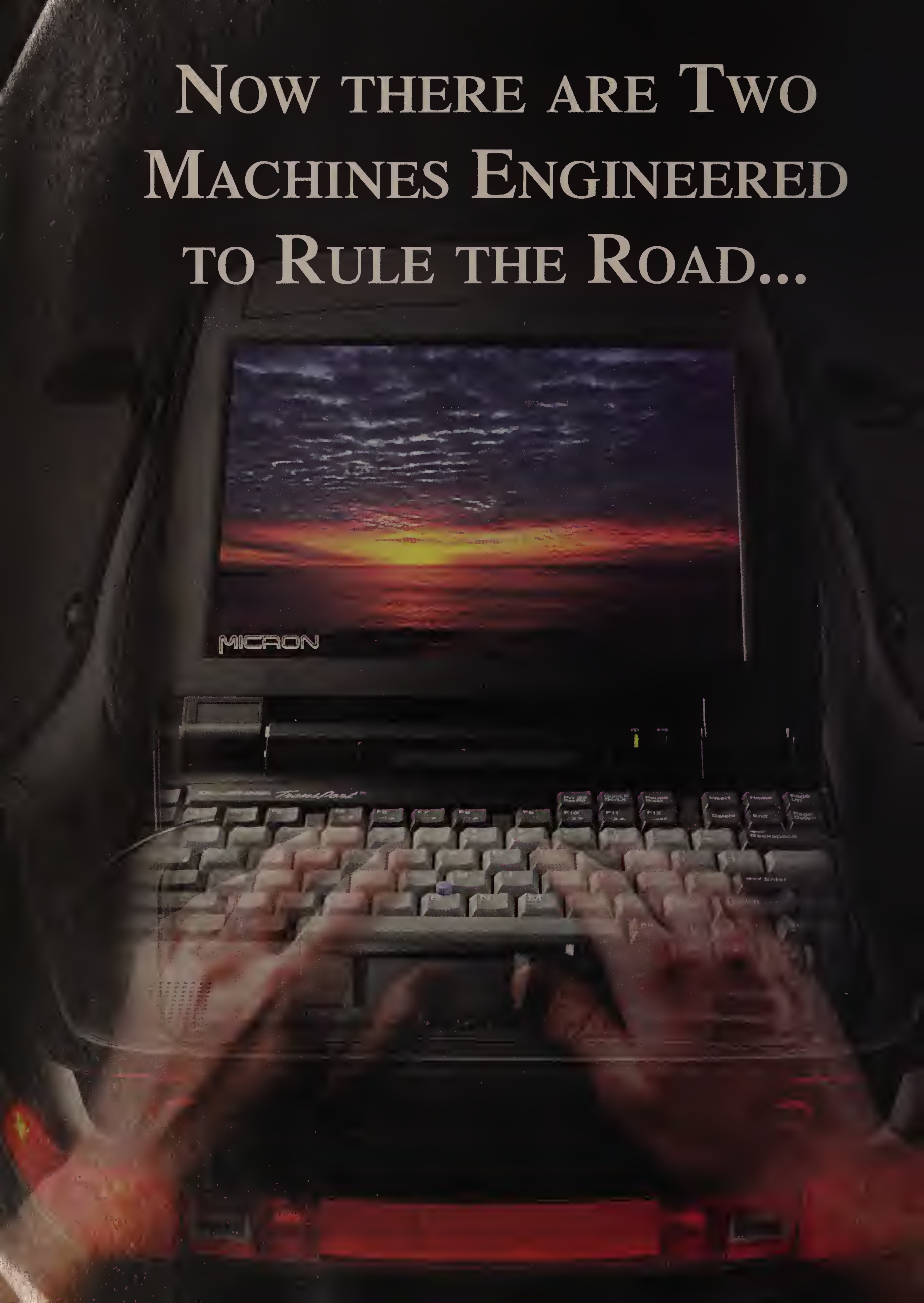
321 Feedback
The buzz on companies, trends, and services.

322 HouseWare
CD-ROMs and cybertoys for the whole family.

328 Top 5 Home PCs
Introducing your monthly home PC shopping list.

330 Home Office
Shareware gems for file management, macro making, and copy-and-pasting.

Now there are Two Machines Engineered to Rule the Road...



THE MILLENNIA TRANSPORT™ IS ONE OF THEM.

Powerful desktop computing, built for the road.

The Micron Millennia TransPort gives you the right combination of performance, standard features and options to match the best of desktop PCs. It's a no-compromise PC for the office or the road.

Flexible features, made for the way you work.

Micron's exclusive FlexOpt™ feature set includes two bays for your choice of seven notebook configurations. Drop in a modular quad speed CD ROM drive. Add a second intelligent modular lithium-ion battery, or 1.2GB hard drive to boost productivity. And count on intuitive features like Micron's innovative Pick-a-Point™ system that lets you choose either touchpad or pointing stick operation.

Engineered for performance.

A 133MHz mobile Intel Pentium® processor plus pipelined burst cache and EDO memory give you the power you need to take your show on the road at record speed.

Product protection that's second to none.

Micron is so confident in the design and construction of the Millennia TransPort that we offer an industry first—the Micron Power℠ warranty*. It includes a five-year limited warranty on the microprocessor and main memory and a three-year limited parts-only system warranty.

On the road to stardom. Just ask the experts.

Outstanding feature set:

"Replace your desktop PC and your notebook with the Millennia TransPort? It just might be an even trade."
—Windows Sources, April 1996

"By all accounts . . . a dead-ringer for IBM's ThinkPad . . . but performs better and saves you about $2,500."
—*PC Magazine*, April 9, 1996

Breakthrough performance:

"If you have a 75, 90 or 100MHz Pentium PC on your desk, it will fairly crawl compared to Micron's Millennia TransPort."
—*PC World*, March 1996

"The Millennia TransPort, a bench-burner of a notebook . . . delivered the highest Winstone 96 score we've ever seen on a notebook: 5.3". —*Windows Sources*, April 1996

intel inside pentium

Designed for Microsoft® Windows®95

SERVICE & RELIABILITY · PC MAGAZINE · READERS' CHOICE
July 1994

Windows Sources Stellar
APRIL 1996

800-250-5713
http://www.mei.micron.com

MICRON ELECTRONICS, INC.

Circle 149 on reader service card

SPEC IT OUT

133MHz INTEL MOBILE PENTIUM® PROCESSOR combined with 256KB of pipelined burst cache and 16MB of EDO memory provide the high level of performance you've come to expect from Micron.

11.3" ACTIVE MATRIX DISPLAY shows you the big picture in vivid 800 x 600 color.

PCI GRAPHICS ACCELERATOR provides blazing graphic performance with VGA, S-Video, and NTSC video outputs.

DUAL INFRARED PORTS provide convenient IRDA-compliant wireless connection in front or in back.

SOUNDBLASTER™ 16 SOUND delivers 16-bit stereo sound to two integrated stereo speakers for the complete multimedia experience.

TWO PCMCIA SLOTS hold either two Type II or one Type III device. Handles a wide variety of communications and storage options.

REMOVABLE 1.2GB DRIVE gives you vast amounts of storage and allows you to upgrade to a larger hard drive in the future.

4X MODULAR CD-ROM provides fast access to a whole new world of information.

LITHIUM-ION BATTERY Intelligent modular lithium-ion batteries give you the power to complete the job. Add a second modular battery in bay two and double your productivity.

DUAL POINTING DEVICES The Pick-a-Point™ offers two pointing devices; choose either the touchpad or the pointing stick.

MODULAR BAY #2:

Intelligent lithium-ion battery

or

4X CD-ROM drive

or

2nd 1.2GB hard drive

or

3.5" floppy drive

MODULAR BAY #1:

Intelligent lithium-ion battery

or

3.5" floppy drive

DESKTOP READY

"An excellent entry into the mobile Pentium fray, Micron's Millennia TransPort offers a solid blend of features, performance and design."
—*Windows Sources*, April 1996

Millennia TransPort P133

Standard Features

- 133MHz Mobile Intel Pentium® processor
- Intel 430MX PCIset
- 256KB L2 pipelined burst cache
- 4X modular CD-ROM drive
- 11.3" active matrix color display, 800 x 600
- PCI graphics accelerator, 1MB RAM
- Pick-a-Point™ dual pointing devices integrate both pointing stick and touchpad
- Removable EIDE hard drive (1.2GB max.)
- 3.5" modular floppy drive
- Intelligent modular lithium-ion battery
- SoundBlaster™ 16-bit stereo sound
- Built-in stereo speakers and microphone
- 2 Type II or one Type III PCMCIA slots
- S-Video and NTSC video-outputs
- Headphone, microphone and line-in jacks
- 2 infrared ports, one front, one back
- Parallel, serial, VGA and 2 PS/2 ports
- Dimensions: 11.7" x 9.4" x 2.0", Weight: 6.9 lbs.†
- Nylon carrying case
- Microsoft® Windows® 95 CD & MS Plus! CD
- Microsoft Office Pro 95 and Bookshelf 95 CDs
- 5-year/3-year Micron Power℠ warranty*

A
- 32MB EDO memory (48MB max.)
- 1.2GB removable hard drive
- 2nd intelligent modular lithium-ion battery
- Motorola® Montana 28.8 fax/modem

$5,799 Business lease $182/month

B
- 16MB EDO memory (48MB max.)
- 1.2GB removable hard drive
- 2nd intelligent modular lithium-ion battery

$4,899 Business lease $167/month

†Includes 3.5" floppy and one battery.

Options

- **MicronDock™ multimedia port replicator:** Ethernet LAN adapter, SCSI-2 port, S-Video and NTSC video outputs, built-in stereo speakers, infrared port, headphone, microphone, line-in jacks, parallel, serial, VGA and 2 PS/2 ports.....$299

- **MicronExec™ desktop package:** Matching black 17" monitor (15.8" display) with matching black mouse, mousepad and keyboard (can be used with or without MicronDock).....$799
- Motorola Montana 28.8 fax/modem supports regular telephone connections, cellular phones and two-way paging devices.....$299
- 2nd intelligent modular lithium-ion battery.....$199
- 2nd 1.2GB modular hard drive (2.4GB total).....$599
- 16MB EDO memory upgrade.....$699
- Leather carrying case upgrade.....$59

*MICRON POWER℠ WARRANTY & SUPPORT

- 5-year limited warranty on microprocessor and main memory
- 3-year limited parts-only system warranty
- 30 days of free Micron-supplied software support
- 30-day money-back policy
- 24-hour technical support

All sales are subject to Micron's standard limited warranties and terms and conditions of sale. Copies of the limited warranties may be obtained by calling Micron.

800-250-5713
http://www.mei.micron.com

intel inside pentium PROCESSOR

MICRON ELECTRONICS, INC.

900 E. Karcher Road, Nampa, ID 83687
Mon-Fri 6am-10pm Sat 7am-5pm (MT) • 24-hour technical support
208-893-3434 • Fax 208-893-3424 • Purchase Order Fax 208-893-8992

© 1996 Micron Electronics, Inc. All rights reserved. All prices and specifications subject to change without notice. Micron Electronics, Inc. is not responsible for omissions and/or errors in typography or photography. Micron Power℠ is a service mark; Millennia TransPort, Pick-a-Point, MicronDock, MicronExec and FlexOpt are trademarks of Micron Electronics Inc. Intel, Intel Inside and Pentium are registered trademarks of the Intel Corporation. Microsoft is a registered trademark and Windows 95 and the Windows logos are trademarks of Microsoft Corporation. All other company trademarks are trade names of each respective company. Prices do not include shipping and handling. 30 day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All returns require RMA numbers and must be shipped in the original condition prepaid and insured. Lease prices based on 36-month lease. TRNS-PCWD-9606

Circle 149 on reader service card

on the information highway, all roads to lead PC WORLD online.

Join the information hounds who are connecting to the world's most popular personal computing authority. PC WORLD Online is *the* place to get connected:

America Online: keyword pcworld

CompuServe: go pcworld

PRODIGY: jump pcworld

Web: http://www.pcworld.com

Call 1.800.PCWOL.95 and get connected.

PC WORLD online

get a line on the world

©1995 PC World Communications. All rights reserved. All other brand names and products are trademarks or registered trademarks of their respective holders.

PC WORLD

EDITOR IN CHIEF Philip Lemmons

EDITOR Cathryn Baskin

EXECUTIVE EDITORS Eric Bender, Tracey Capen, Steve Fox, Andy Reinhardt

MANAGING EDITOR Luis Camus

ART DIRECTOR Robert Kanes

SENIOR ONLINE EDITOR Dan Miller

SENIOR REVIEWS EDITOR Carla Thornton

SENIOR TECHNICAL EDITOR Karl Koessel

EAST COAST EDITOR Randy Ross

SENIOR WRITER Roberta Furger

EDITORIAL

Assistant Managing Editor Anne Kandra

Senior Associate Editors Rex Farrance, Bryan Hastings, Ann Kremers, Michael S. Lasky, Yael Li-Ron, Harry McCracken, Gabrielle Mitchell, Lincoln Spector, Christina Wood

Associate Editors Brad Grimes, Catherine Kenny, Melissa Riofrio, Carol White

Technical Editor Shane Rau

Staff Editors John Goddard, Laurianne McLaughlin

Online Staff Editors Richard Overton, Samantha Parent

Assistant Editors Eric Hellweg, Aoife M. McEvoy

Editorial Researcher Angela Freeman

Editorial Assistant Allyson Bates

Copy Chief Richard Johnson

Senior Copy Editors Barbara Lewis, Marla Miyashiro

Copy Editors Stephen Compton, Kim Saccio, Hon Walker

Editorial Production Associate Henry Pham

Assistant to the Editor in Chief Linda L. Grubbs

Administrative Assistants Stephanie Daigre, Heidi Zinsmeister Wolff

Business Manager Heidi Anderson

Librarian Stella Chan

ART & DESIGN

Associate Art Director Greg Silva

Assistant Art Director Tim J Luddy

Senior Designers Barbara Adamson, Laura Guenn

Designer Carolyn Perot

Assistant Designer, Infographics Robin Manning

Production Artist Marlene Tobias

CONTRIBUTING EDITORS

Steve Bass, George Campbell, Scott Dunn, Bronwyn Fryer, Judy Heim, Eric Knorr, Stephen Manes, James A. Martin, Celeste Robinson, Richard Scoville, Scott Spanbauer

PC WORLD TEST CENTER

Test Center Director Julian Milenbach

Manager, Performance Testing Ulrike Diehlmann

Manager, Usability Testing Susan Silvius

Performance Analysts Dave Casini, Jeffrey D. Kuta, Kevin Mitchell, Mike Salayko

Test Center Coordinators Andrew Hawn, Julian Weatherby

NETWORK WORLD–PC WORLD NETWORK TEST CENTER

Director William L. Rinko-Gay

USER GROUP ADVISORY BOARD

Steve Bass, Pasadena IBM Users Group; Roger Bender, Microcomputer Managers Association; Jack Bolton, Atlanta PC User's Group (APCUG); Brian Camenker, Boston Computer Society; Rollie Cole, APCUG; Paul Curtis, APCUG; Mary Dolce, Chicago Computer Society; Sandy Frunzi, Las Vegas PC User Group; Al Harrison, Houston Area League PC Users; David Hoffman, NYPC; Joseph Rigo, NYPC; Robert Rodrigue, MicroLink PC User Group

Founder David Bunnell

Founding Editor Andrew Fluegelman

PC WORLD ONLINE SERVICES GROUP

Publisher Thomas Gewecke

Director, Business Development Sara Frankel

Director, Marketing Scott Danish

Director, Operations Nancy H. Miller

Director, Interactive Services Dennis Sheridan

Manager, Product Development Adam Block

Manager, Online Design Jonas Höglund

Business Analyst Susan Fry

Online Producers Carla Lieberman, Licia Slimon

Content Development Specialist Declan Fox

Content Engineer Nick Van Cleve

Production Coordinator Paul O'Neil

Producers, Product Development Spencer Ante, Greg Weinger

Assistant to the Publisher and Special Products Manager Martyne Page

PC WORLD COMMUNICATIONS, INC.

Chief Executive Officer Patrick Kenealy

President and Chief Operating Officer Richard J. Marino

Publisher J. Samuel Huey

VP and Associate Publisher Jeff Edman

VP and Chief Financial Officer Vicki Peilen

VP, Circulation Shawne Pecar

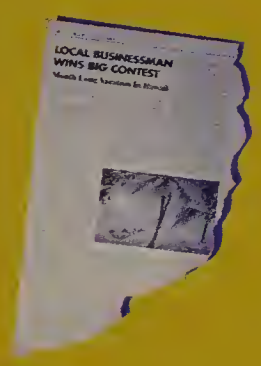
VP, Human Resources Richard Willoughby

VP, Manufacturing Linda Manes Goodwin

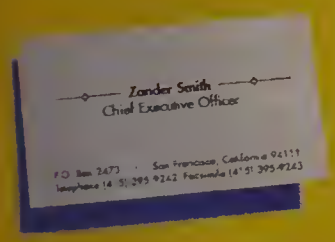
VP, Research Cheryl Brink

Just what you need, an in-box with a mind of its own.

PaperPort Vx makes faxing, filing, or even ignoring memos easier than ever.



You see your name in a local newspaper, PaperPort it, then fax or e-mail it to all your friends. (Works just as well on work-related stuff.)



Feed it a business card and it automatically goes into an electronic card file of contacts.

Get a close look at your favorite chart, or your favorite friend. PaperPort Vx scans up to a detailed 256 shades of gray.

It's time to put paper to work. Simply feed any document into PaperPort Vx™ and in as little as 2 seconds it magically appears on your screen. From there you can organize it or send it any way you please. File it in a folder. Or drag it to a word processing icon, where your application launches and your text appears, ready to be edited. Drop it on the fax icon and out through your fax software it goes. You can even treat your printer like a copy machine, making multiple copies or putting several items on a single page. PaperPort Vx comes with $249 worth of free software, including OmniPage LITE™ OCR, CardScan SE™ and PictureWorks Copier.™ No other scanner, or in-box, has more ways to make paper more productive. To see the whole picture, head to your favorite retailer or our web site at http://www.visioneer.com, or call us at 1-800-787-7007, ext. 205. And put paper in its place.

$299* gets you the winner of the *Macworld* Five Star and *PC World* Best Buy awards.

PC WORLD BEST BUY

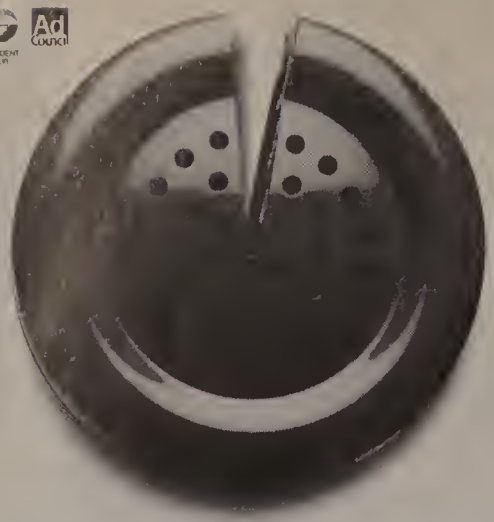
MW ★★★★★

PAPERPORT Vx

VISIONEER

*Estimated street price. ©1996 Visioneer, Inc. All rights reserved. Visioneer and PaperPort Vx are trademarks of Visioneer. The Visioneer logo is a registered trademark. Other brands and product names are trademarks of their respective companies.

Circle 187 on reader service card



Just a fraction of the time we spend on the phone can help answer society's problems.

Just a fraction of our time watching movies could help bring many happy endings.

Just a fraction of what we spend dining out can help pick up the tab for a worthy cause.

It takes so little to help so much.

Millions of people have helped establish five percent of their incomes and five hours of volunteer time per week as America's standard of giving.

Get involved with the causes you care about and give five.

Give Five.

What you get back is immeasurable.

PC WORLD

HOW TO CONTACT PC WORLD

SUBSCRIPTION SERVICES, ADDRESS CHANGES

Call 800/234-3498 (303/604-1465 in Colorado and Canada) or write Subscriber Services, P.O. Box 55029, Boulder, CO 80322-5029. To place new orders, call 800/825-7595. Contact *PC World* customer service on the Internet at customer_service@pcworld.com.

MAIL

PC World Editorial, 501 Second St. #600, San Francisco, CA 94107
Phone: 415/243-0500 **Fax:** 415/442-1891
America Online: keyword pc world
CompuServe: go pcworld
Microsoft Network: go pcworld
Prodigy: jump pc world
World Wide Web: http://www.pcworld.com
Internet: letters@pcworld.com; for subscription questions, customer_service@pcworld.com

PC WORLD ONLINE

You can contact the editors and staff on PC World Online via America Online (keyword pc world), CompuServe (go pcworld), Microsoft Network (go pcworld), Prodigy (jump pc world), and the World Wide Web (http://www.pcworld.com). PC World Online offers valuable features only electronic media can provide: the latest PC industry news and information; quick content searching; real-time interaction and feedback; links to software, demos, and other electronic resources; online-exclusive editorial features; and message boards. To obtain a free starter kit for America Online, CompuServe, or Prodigy, call 800/729-6595.

LETTERS TO THE EDITOR

Send letters electronically to the Message Board on PC World Online; Internet, letters@pcworld.com; MCI Mail, 666-2936 or pcwletters; or mail them to *Letters* at *PC World*. Include your name, city, and state. We reserve the right to edit letters.

REAL PROBLEMS, REAL SOLUTIONS

Send article ideas—including a brief outline of your company, job, problem, and solution as well as your name, address, and phone number—electronically to the Real Problems, Real Solutions forum on PC World Online; CompuServe, 72614,1534; 408/338-0945 (fax); mail them to *Real Problems, Real Solutions* at *PC World;* or call us at 415/978-3212. *PC World* pays $300 per published column.

FULL DISCLOSURE

Send letters electronically to PC World Online; Internet, smanes@ix.netcom.com; or mail them to *Full Disclosure* at *PC World*.

@HOME

Send letters electronically to the appropriate forum on PC World Online (for example, send *Consumer Watch* questions to the Consumer Watch forum); Internet, home@pcworld.com; or mail them to *PC World*. Send consumer-related questions and complaints to *Consumer Watch* at *PC World*. You can contact our *Home Office* editor at steve_bass@pcworld.com.

HERE'S HOW QUESTIONS AND SUBMISSIONS

PC World pays $50 for published *Here's How* questions. Keep submissions brief; accepted submissions will be acknowledged by payment. Send questions electronically to the appropriate forum on PC World Online (for example, send *Help Line* questions to the Help Line forum) or to the online address below, or mail them to *PC World*. Contact editors at the addresses below. Please note that editors cannot guarantee personal responses to questions that are not posted to *PC World*'s online forums.
Help Line: CompuServe, 74055,412; MCI Mail, 179-3813; Internet, scott_spanbauer@pcworld.com
Spreadsheets: CompuServe, 72341,2727; MCI Mail, 357-4517; Internet, richard_scoville@pcworld.com
Word Processing: CompuServe, 71571,222; MCI Mail, gcampbell; Internet, george_campbell@pcworld.com
Windows: America Online, pcwsdunn; CompuServe, 74055,412; Internet, pcwsdunn@aol.com
Data Management: CompuServe, 74055,412; Internet, celeste_robinson@pcworld.com
Online: CompuServe, 75300,713; Internet, judy_heim@pcworld.com
Hardware: MCI Mail, 459-7102; Internet, eric_knorr@pcworld.com

NEW PRODUCT ANNOUNCEMENTS

Address hardware and software press releases to *New Products* at *PC World*, or call 415/978-3212.

REPRINTS AND PERMISSIONS

You must have permission before reproducing any material from *PC World*. To quote from or reprint any portion of any article, or to use artwork or photographs from the magazine, write to *PC World*, Reprints and Permissions, 501 Second St. #600, San Francisco, CA 94107; include a phone number. To order reprints of your company's editorial coverage in *PC World*, call 612/582-3810.

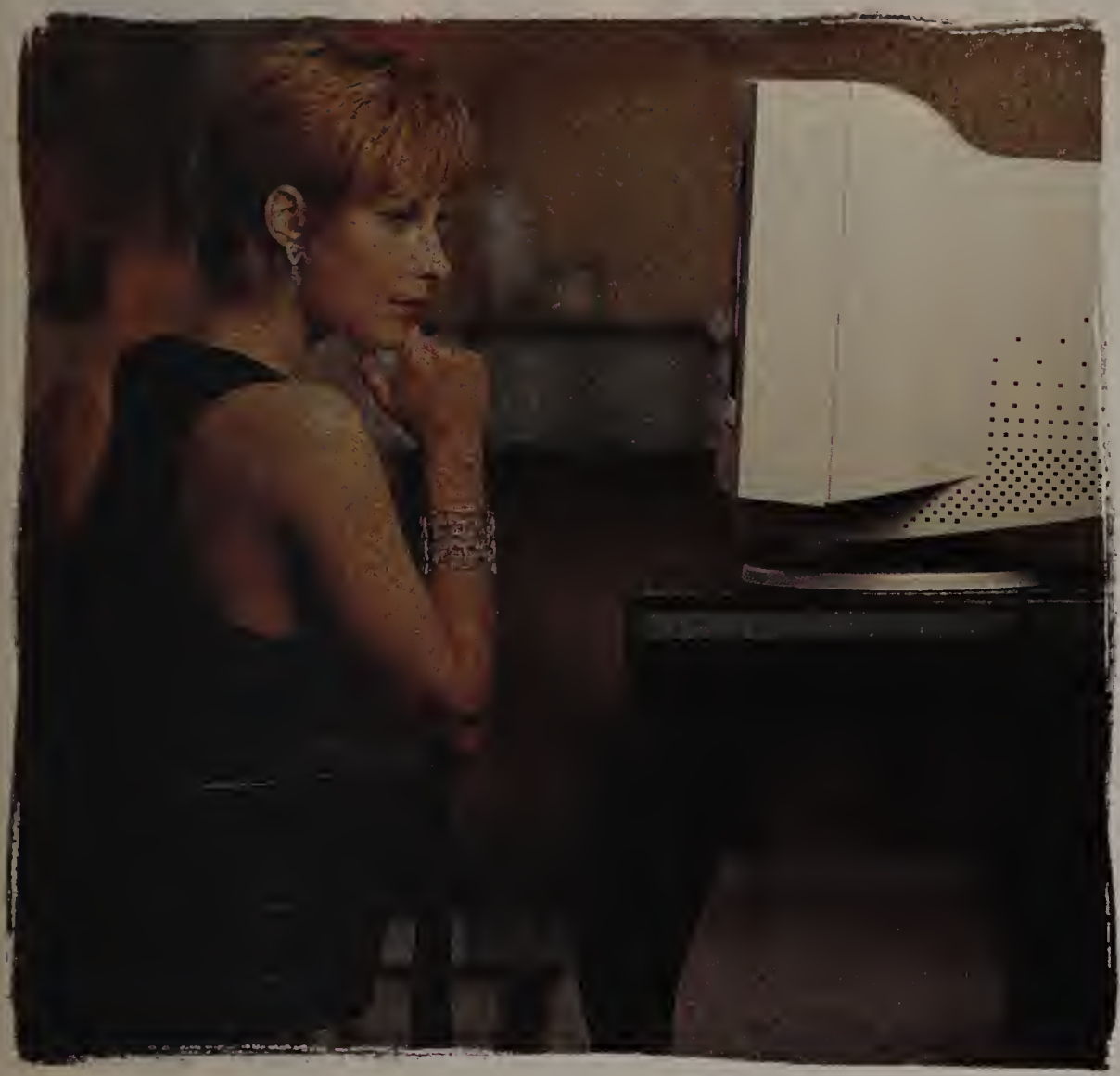
BACK ISSUES

PC World is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 800/521-0600. Issues and article copies are also available from UMI.

MAILING LISTS

Occasionally we make our subscribers' names available to other companies whose products may interest you. Many subscribers find this a valuable service. If you want your name excluded from these mailings, send your mailing label with a request to remove your name from our promotional file to Subscriber Services, P.O. Box 55029, Boulder, CO 80322.

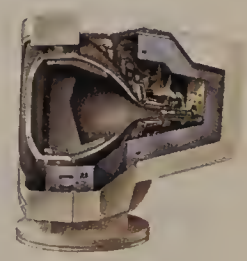
EUROPEAN ART COMES TO THE SCREEN, WITHOUT THOSE ANNOYING SUBTITLES.



From the continent that gave us museums and luxury automobiles come their combined spiritual equivalent: Nokia monitors. Nokia is already a household name (and cafe and office name too) throughout Europe. And now Nokia monitors are quickly winning the hearts and eyes of Americans too.

The European passion for beauty is expressed in the magnificent clarity of the screens and the soothing refresh rates.* The Nordic obsession with technical perfection is embodied in the variety and sensitivity of Nokia's controls and components. And the continental lust for life and good health is evident in the extraordinary TCO-compliant emissions controls Nokia invented.

Add to this the sheer elegance of the tooling and Plug 'N' Play connectivity under Windows® 95. A Nokia monitor is more than electronics. It's art. But, it's an avant garde that's quite easy to appreciate. Especially when it makes those darn little subtitles so much easier for you to read.



Nokia is the leading brand of monitors in Europe, and an engineering standard for the world

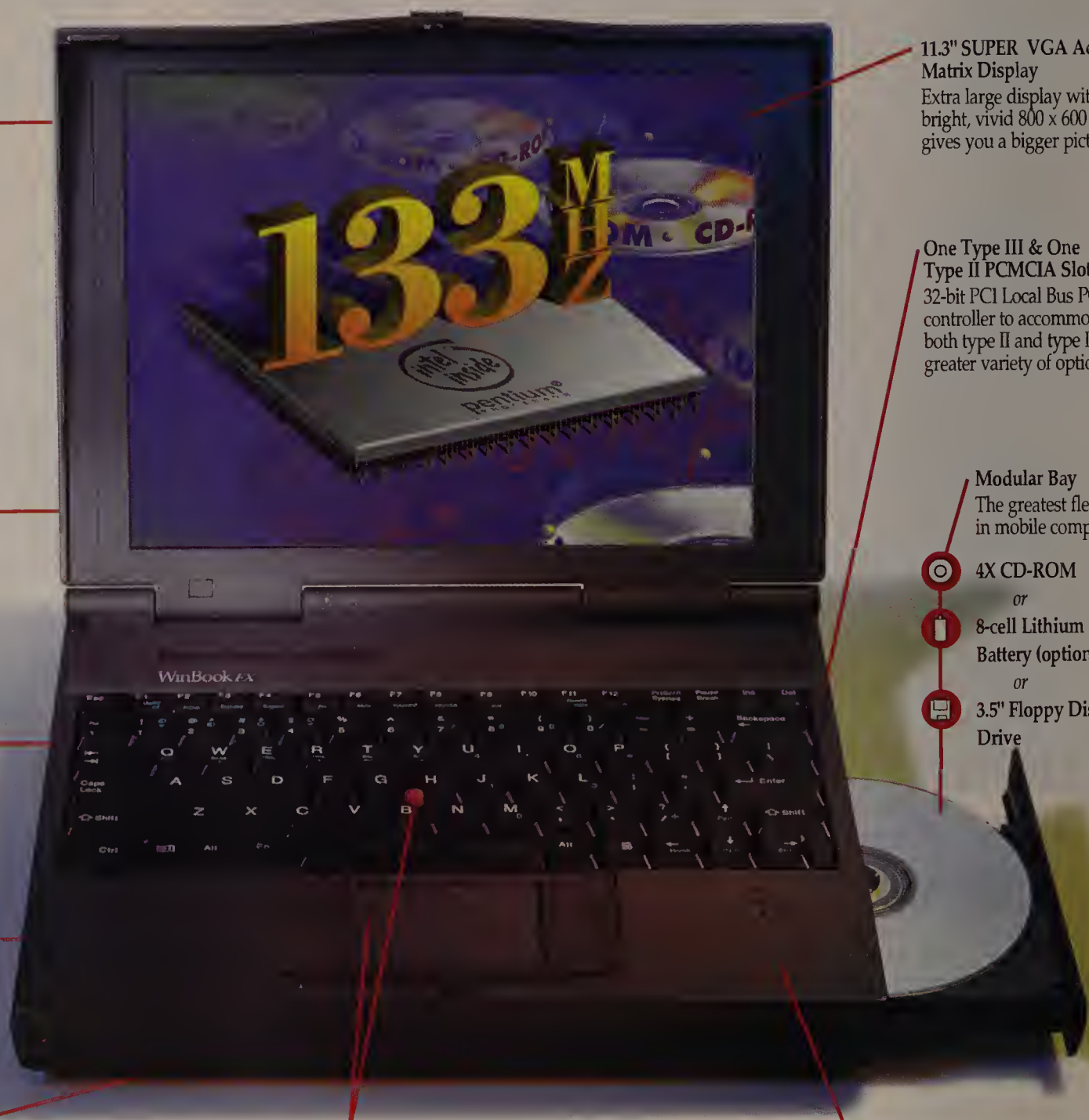
For more information call **1.800.BY NOKIA.**

Dept. Code: N51

NOKIA
MONITORS

*When used with an appropriate graphics card. Models are continuously upgraded. Size of CRT measured diagonally. Actual viewing size is slightly less. Manufactured and designed in Finland in an ISO 9001 approved environment. ©1996 Nokia Display Products, Inc. Multigraph, Valuegraph, MicroEmission and FullScreen are trademarks of Nokia Display Products, Inc. E-MAIL bynokia@aol.com. Prices and specifications subject to change without notice. The Energy Star emblem does not represent EPA endorsement of any product or service. All other trademarks are the sole property of their respective companies.

THE NEW WINBOOK FX
MAXIMUM SPECS



16MB EDO RAM Standard – up to 40MB total
Super-fast EDO RAM on board and a second bank for expansion. User upgradable—upgrade without wasting RAM.

100MHz to 133MHz Intel® Pentium® Chip
Plus 256K syncburst cache—incredible performance that rivals many desktop PCs.

Two-way Infrared Port
Adds the convenience of IRDA-compliant wireless connection.

Removable 810MB to 1.3GB HDD
You get greater data storage and upgradability for the future

12-cell Lithium Ion Battery
4 more cells than most notebooks plus 52 watts mean longer on-the-road computing with enough battery life to run your CD-ROM.

Dual Pointing Devices
Pick your pointing device: a standard dual-button pointing stick or optional touchpad (pictured)

16-bit Stereo Sound
SoundBlaster compatible sound for a complete multimedia experience

11.3" SUPER VGA Active Matrix Display
Extra large display with bright, vivid 800 x 600 color gives you a bigger picture

One Type III & One Type II PCMCIA Slot
32-bit PCI Local Bus PCMCIA controller to accommodate both type II and type III for a greater variety of options

Modular Bay
The greatest flexibility in mobile computing

- 4X CD-ROM
- *or*
- 8-cell Lithium Ion Battery (option)
- *or*
- 3.5" Floppy Disk Drive

WinBook FX

1-800-254-7808

Monday-Friday, 8am-9pm EST • Saturday, 9am-4pm

Use your VISA, Discover Card, MasterCard, personal check or P.O. with credit approval. U.S. sales only. 30-day unconditional money-back guarantee from date of purchase.

WinBook®
COMPUTER CORPORATION
a subsidiary of Micro Electronics, Inc.

The new WinBook FX combines the maximum features in a high-quality, best value notebook, and continues the award-winning tradition of WinBook Computers.

- POWER-SAVING 100MHZ INTEL® PENTIUM® CHIP
- 16MB EDO RAM
- 810MB REMOVABLE HDD
- PLUS STANDARD FEATURES

$3599

- POWER-SAVING 133MHZ INTEL® PENTIUM® CHIP
- 16MB EDO RAM
- 1.3GB REMOVABLE HDD
- PLUS STANDARD FEATURES

$3999

WINBOOK FX STANDARD FEATURES

- POWER-SAVING INTEL® PENTIUM® NOTEBOOK CHIP
- 16MB EDO RAM
- 11.3" SUPER VGA ACTIVE MATRIX COLOR DISPLAY
- 3.5" 1.44MB DISKETTE DRIVE MODULE
- 4X CD-ROM MODULE
- 6.8 POUNDS (WITH FDD)
- 12-CELL 52W LITHIUM ION BATTERY
- 32-BIT LOCAL-BUS VIDEO
- 16-BIT SOUNDBLASTER COMPATIBLE STEREO SOUND
- 1MB VIDEO RAM
- 256K SYNCBURST CACHE
- ONE TYPE II AND ONE TYPE III PCMCIA SLOT
- INTEGRATED DUAL-BUTTON POINTING STICK, OPTIONAL TOUCHPAD
- PARALLEL, SERIAL, PS/2, INFRARED AND GAME PORT

ADD RAM IN 8MB INCREMENTS FOR ONLY $399 AT TIME OF NOTEBOOK PURCHASE

©1996 WinBook Computer Corporation. All rights reserved. WinBook is a registered trademark of Micro Electronics, Inc. The Intel Inside logo and Pentium are registered trademarks of the Intel Corporation. All other trademarks and registered trademarks are property of their respective corporations. All prices and specifications are subject to change without notice or obligation. Prices do not include shipping.

5 OUT OF 5: WINDOWS MAGAZINE'S HIGHEST RATING

W W W W W

"...the best design of any notebook I've tested."

—Michelle A. Tyrrell, *Windows Magazine*, March 1996, WinBook XP5

100MHZ PENTIUM® CHIP, TFT, 16MB, LITHIUM, $2999.

WinBook XP5

intel inside pentium® PROCESSOR

PC WORLD BEST BUY

"Fastest notebook yet...."

—*PC World*, April 1996, WinBook XP5

$2399

WINBOOK XP5 75MHz

- 75MHz INTEL PENTIUM® PROCESSOR — POWER-SAVING NOTEBOOK CHIP
- 8MB RAM
- 540MB REMOVABLE HDD
- 256K L2 CACHE
- 14.4 SEND/RECEIVE FAX/VOICE/DATA MODEM
- 10.4" TFT ACTIVE MATRIX COLOR DISPLAY
- 3.5" 1.44MB DISKETTE DRIVE
- 6.1 POUNDS
- 32-BIT LOCAL-BUS VIDEO
- NIMH BATTERY W/ POWER MANAGEMENT
- 1MB VIDEO RAM
- TWO TYPE II OR ONE TYPE III PCMCIA SLOT
- INTEGRATED DUAL-BUTTON POINTING STICK, OPTIONAL DUAL-BUTTON TRACKBALL OR TOUCHPAD
- PARALLEL, SERIAL AND PS/2 PORTS

Double your RAM to 16MB for only $399 at time of notebook purchase!

$2999

WINBOOK XP5 100MHz

- 100MHz INTEL PENTIUM® PROCESSOR — POWER-SAVING NOTEBOOK CHIP
- 16MB RAM
- 810MB REMOVABLE HDD
- 256K L2 CACHE
- 14.4 SEND/RECEIVE FAX/VOICE/DATA MODEM
- 10.4" TFT ACTIVE MATRIX COLOR DISPLAY
- 3.5" 1.44MB DISKETTE DRIVE
- 6.1 POUNDS
- 32-BIT LOCAL-BUS VIDEO
- 40 WATT LITHIUM ION BATTERY W/ POWER MANAGEMENT
- 1MB VIDEO RAM
- TWO TYPE II OR ONE TYPE III PCMCIA SLOT
- INTEGRATED DUAL-BUTTON POINTING STICK, OPTIONAL DUAL-BUTTON TRACKBALL OR TOUCHPAD
- PARALLEL, SERIAL AND PS/2 PORTS

Add stereo sound for only $79.95!

$3199

WINBOOK XP5 120MHz

- 120MHz INTEL PENTIUM® PROCESSOR — POWER-SAVING NOTEBOOK CHIP
- 16MB RAM
- 810MB REMOVABLE HDD
- 256K L2 CACHE
- 14.4 SEND/RECEIVE FAX/VOICE/DATA MODEM
- 10.4" TFT ACTIVE MATRIX COLOR DISPLAY
- 3.5" 1.44MB DISKETTE DRIVE
- 6.1 POUNDS
- 32-BIT LOCAL-BUS VIDEO
- 40 WATT LITHIUM ION BATTERY W/ POWER MANAGEMENT
- 1MB VIDEO RAM
- TWO TYPE II OR ONE TYPE III PCMCIA SLOT
- INTEGRATED DUAL-BUTTON POINTING STICK, OPTIONAL DUAL-BUTTON TRACKBALL OR TOUCHPAD
- PARALLEL, SERIAL AND PS/2 PORTS

Add Syncburst cache and 1.3GB HD, $300!

$399

DOCKING STATION w/4x CD-ROM, EXPANSION BAY AND SLOTS

A WinBook XP for every budget, starting at $1599!

$1599

WINBOOK XP 75MHz

- 75MHz INTEL® 486 PROCESSOR
- 8MB RAM
- 540MB REMOVABLE HDD
- 14.4 SEND/RECEIVE FAX/VOICE/DATA MODEM
- 10.3" DUAL-SCAN COLOR DISPLAY

$1999

WINBOOK XP 100MHz

- 100MHz INTEL® 486 PROCESSOR
- 16MB RAM
- 810MB REMOVABLE HDD
- 14.4 SEND/RECEIVE FAX/VOICE/DATA MODEM
- 10.3" DUAL-SCAN COLOR DISPLAY

PLUS MANY MORE QUALITY STANDARD WINBOOK XP FEATURES!

WinBook® COMPUTER CORPORATION

a subsidiary of Micro Electronics, Inc.

Circle 254 on reader service card

Options include your choice of integrated touchpad or trackball pointing devices, 3-year extended limited warranty, stereo sound, WinBook carrying cases, 28.8 Fax/Modem PCMCIA card and more!

CALL US TODAY, TOLL-FREE

1-800-254-7808

Monday-Friday, 8am-9pm EST • Saturday, 9am-4pm

Use your VISA, Discover Card, MasterCard, personal check or P.O. with credit approval. U.S. sales only. 30-day unconditional money-back guarantee from date of purchase.

©1996 WinBook Computer Corporation. All rights reserved. WinBook is a registered trademark of Micro Electronics, Inc. The Intel Inside logo and Pentium are registered trademarks of the Intel Corporation. All other trademarks and registered trademarks are property of their respective corporations. All prices and specifications are subject to change without notice or obligation. Prices do not include shipping.

FOR YOU DESKTOP BARGAIN
THIS WOULD BE KNOWN AS

200MHz PENTIUM® PRO PROCESSOR
DELL DIMENSION™ XPS Pro200n

- Mini Tower Model
- 32MB EDO Memory
- 256KB Internal L2 Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS® Office Professional with Bookshelf for Windows® 95 (N.F.I.)
- Microsoft® Windows NT™/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty†
- ★ *Upgrade to 1 Year of Windows NT support for only $149 more.*
- ★ *Upgrade to 64MB of EDO memory for only $899 more.*

$3599
Business Lease◊: $130/Mo.
Order Code #500257

150MHz PENTIUM PRO PROCESSOR
DELL DIMENSION XPS Pro150n

- Mini Tower Model
- 16MB EDO Memory
- 256KB Internal L2 Cache
- 2.5GB Hard Drive [10.5ms]
- 15TX Trinitron Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty
- ★ *Upgrade to 32MB of EDO memory for only $399 more.*
- ★ *Upgrade to a 17LS monitor (15.7" v.i.s.) for only $240 more.*

$2649
Business Lease: $98/Mo.
Order Code #500256

166MHz PENTIUM PROCESSOR
NEW DELL DIMENSION XPS P166s

- Mini Tower Model
- 16MB SDRAM Memory
- 512KB Pipeline Burst Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- AWE32 Wave Table Upgrade Card
- Altec Lansing ACS-31 Speakers
- 1.6GB/3.2GB Travan Tape Backup
- 28.8 Data/Fax Modem
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

$3479
Business Lease: $129/Mo.
Order Code #500255

166MHz PENTIUM PROCESSOR
NEW DELL DIMENSION XPS P166s

- Mini Tower Model
- 16MB SDRAM Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Integrated Sound Blaster 16 Sound
- Altec Lansing ACS-5 Speakers
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

Pictured System

$2549
Business Lease: $94/Mo.
Order Code #500254

133MHz PENTIUM PROCESSOR
DELL DIMENSION XPS P133c

- Mini Tower Model
- 16MB EDO Memory
- 512KB Pipeline Burst Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 6X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- AWE32 Wave Table Sound Card
- Altec Lansing ACS-31 Speakers
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

$2899
Business Lease: $107/Mo.
Order Code #500253

133MHz PENTIUM PROCESSOR
DELL DIMENSION XPS P133c

- Mini Tower Model
- 16MB EDO Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 6X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty
- ★ *Upgrade to 32MB of EDO memory for only $399 more.*

$2199
Business Lease: $81/Mo.
Order Code #500252

100MHz PENTIUM PROCESSOR
DELL DIMENSION P100t

- Mini Tower Model
- 16MB EDO Memory
- 1.6GB Hard Drive [10ms]
- 15TX Trinitron Monitor (13.7" v.i.s.)
- 64-bit PCI 2MB DRAM Video
- 4X Multi-session EIDE CD-ROM Drive
- Microsoft Windows 95/30 Days Free Support/Dell Mouse
- 3 Year Limited Warranty
- ★ *Add Altec Lansing ACS-31 Speakers and a AWE32 Wave Table Sound Card for only $219 more.*
- ★ *Upgrade to 24MB of EDO memory for only $199 more.*

$1799
Business Lease: $67/Mo.
Order Code #500251

100MHz PENTIUM PROCESSOR
DELL DIMENSION P100t

- Mini Tower Model
- 8MB EDO Memory
- 850MB Hard Drive
- 14XE Monitor (13.19" v.i.s.)
- 64-bit PCI 1MB DRAM Video
- 4X Multi-session EIDE CD-ROM Drive
- Microsoft Windows 95/30 Days Free Support/Dell Mouse
- 3 Year Limited Warranty
- ★ *Upgrade to 16MB of EDO memory for only $139 more.*
- ★ *Upgrade to a 1.6GB hard drive for only $100 more.*
- ★ *Add a 3Com EtherLink III Combo Card with Parallel Tasking for only $99 mor*

$1449
Business Lease: $54/Mo.
Order Code #500250

NEW STANDARD 3 YEAR LIMITED WARRANTY WITH ALL DELL DIMENSION SYSTEMS.

‡Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., 2214 W. Braker Lane, Suite D, Austin, TX 78758. ◊Business leasing arranged by Leasing Group, Inc. ★Prices and specifications valid in the U.S. only and subject to change without notice. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. MS, Microsoft, Windows and the Windows logo are registered trademarks and Windows NT is a trademark of Microsoft Corporation. XJACK is a registered trademark of US Robotics Mobile Communications Corporation.
©1996 Dell Computer Corporation. All rights reserved.

intel inside pentium PROCESSOR

Designed for Microsoft® Windows® 95

HUNTERS, OPEN SEASON.

DELL DIMENSION
Reliable PCs for High Performance Computing

133MHz PENTIUM PROCESSOR
NEW DELL LATITUDE XPi P133ST

- 11.3" SVGA Active Matrix Color Display
- 16MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 810MB Removable Hard Drive (1.2GB Max)
- PCI Bus Architecture
- Smart Lithium Ion Battery with Advanced Power Management
- 128-bit PCI Graphics Accelerator, 1MB Equivalent Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- IrDA-1 Port
- Integrated 16-bit Audio
- Built-in Speaker, Stereo and Mic Jacks
- Extendable 1 Year Warranty

$4399‡

Business Lease: $158/Mo.
Order Code #800048

120MHz PENTIUM PROCESSOR
DELL LATITUDE XPi P120D

- 10.4" Dual Scan Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 810MB Removable Hard Drive (1.2GB Max)
- Smart Lithium Ion Battery with Advanced Power Management
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
- Optional Dell Latitude DeskDock™ Station Available.
- Extendable 1 Year Warranty

★ *Upgrade to an 810MB hard drive for only $200 more.*

$2399‡

Business Lease: $89/Mo.
Order Code #800036

133MHz PENTIUM PROCESSOR
NEW DELL LATITUDE XPi P133ST

- 11.3" SVGA Active Matrix Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Removable Hard Drive (1.2GB Max)
- PCI Bus Architecture
- Smart Lithium Ion Battery with Advanced Power Management
- 128-bit PCI Graphics Accelerator, 1MB Equivalent Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- IrDA-1 Port
- Integrated 16-bit Audio
- Built-in Speaker, Stereo and Mic Jacks
- Extendable 1 Year Warranty

$3899‡

Business Lease: $140/Mo.
Order Code #800047

75MHz PENTIUM PROCESSOR
DELL LATITUDE XPi P75D

- 10.4" Dual Scan Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 810MB Removable Hard Drive (1.2GB Max)
- Smart Lithium Ion Battery with Advanced Power Management
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- Optional Dell Latitude DeskDock Station Available.
- 6.2 Pounds
- Extendable 1 Year Warranty

★ *Double your RAM to 16MB for only $299 more.*

$1999‡

Business Lease: $74/Mo.
Order Code #800044

BUILD PERFORMANCE WITH THESE OPTIONS.

DELL DIMENSION	ADD
1.6GB/3.2GB Travan Tape Backup	$249
3 Year Next-business-day, On-site Service	$99
28.8 Fax/Modem	$149
Win95 Mechanical Keyboard	$29
3Com EtherLink III Network Interface Card	$79

DELL LATITUDE	ADD
1.2GB Hard Drive (Upgraded from 540MB)	$400
24MB RAM (Upgraded from 8MB)	$699
Advanced Port Replicator and DeskDock Station	$229
28.8 XJACK®/Cabled Modem	$259
External Dell 4X CD-ROM	$359

DIRECT NEWS ON THE INTERNET
For free updates on Dell's product offerings, pricing and other news electronically, send an email message to "DirectNews-request@dell.com." Please use the word "subscribe" as the body of your message.

DELL®

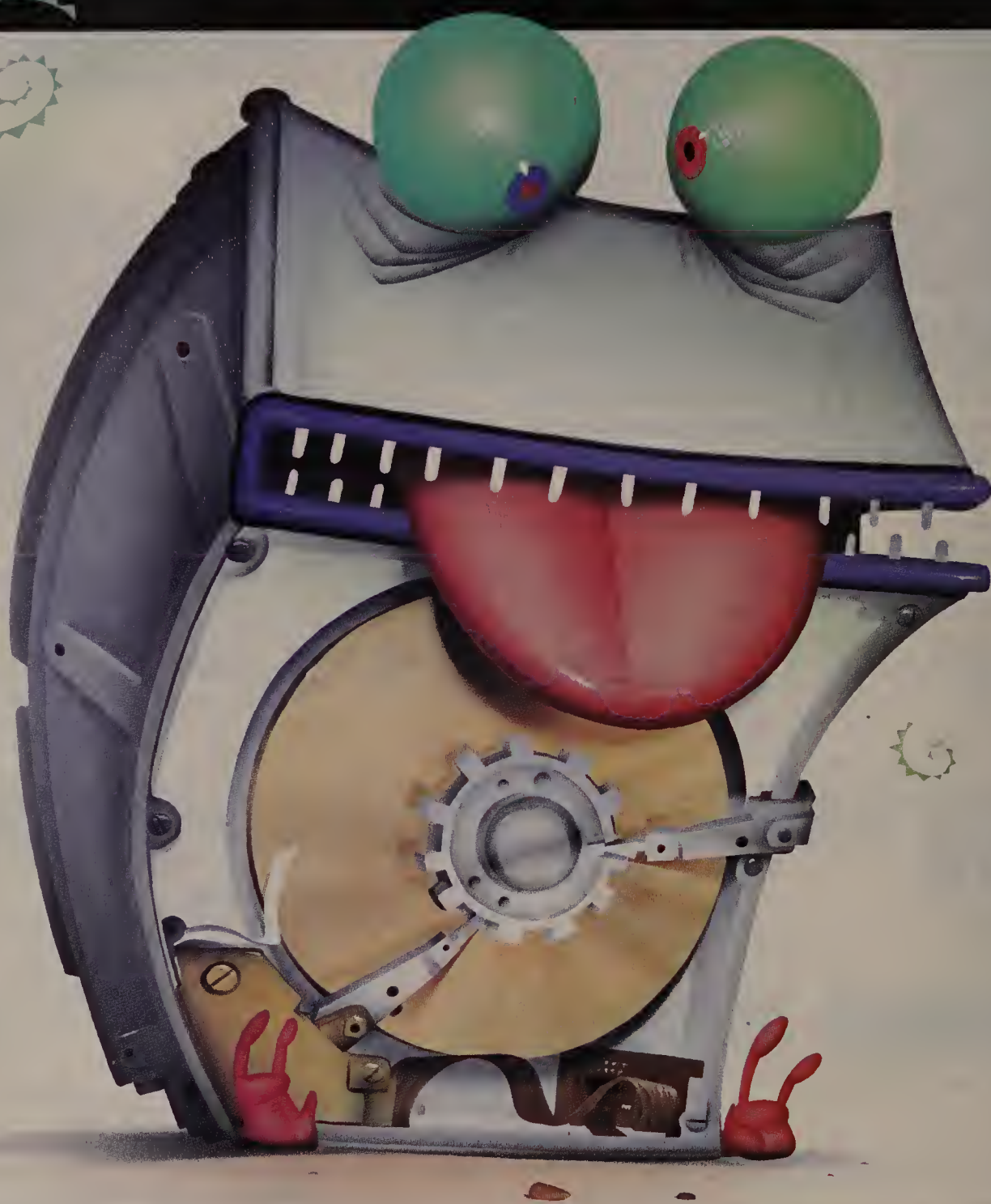
TO ORDER, CALL

800-693-3355

In Canada,* call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/

Keycode #03138

It's What Keeps Your Gig Drive From Gagging.



SCSI. The cool connection for hot peripherals.

Hard drives with SCSI (pronounced scuzzy) are the fastest, highest capacity hard drives available. And, only SCSI hard drives let you multitask. It's just one more reason to give your PC a SCSI connection. To learn more about Adaptec® SCSI host adapters and to enter to win a free SCSI two gigabyte hard drive, or other prize,† call 1-800-655-3977 ext. 5542, or visit our home page at http://www.adaptec.com*

adaptec®

I/O. NOW MORE IMPORTANT THAN EVER.

†Register and request a copy of official rules and sweepstakes details. Limit one entry per legal U.S. resident. No purchase necessary. *For information by fax, dial 1-408-945-2570 ext. 5542, request document no. 14070.

©1995 Adaptec, Inc. All rights reserved. Adaptec and the Adaptec logo are trademarks of Adaptec, Inc., which may be registered in some jurisdictions.

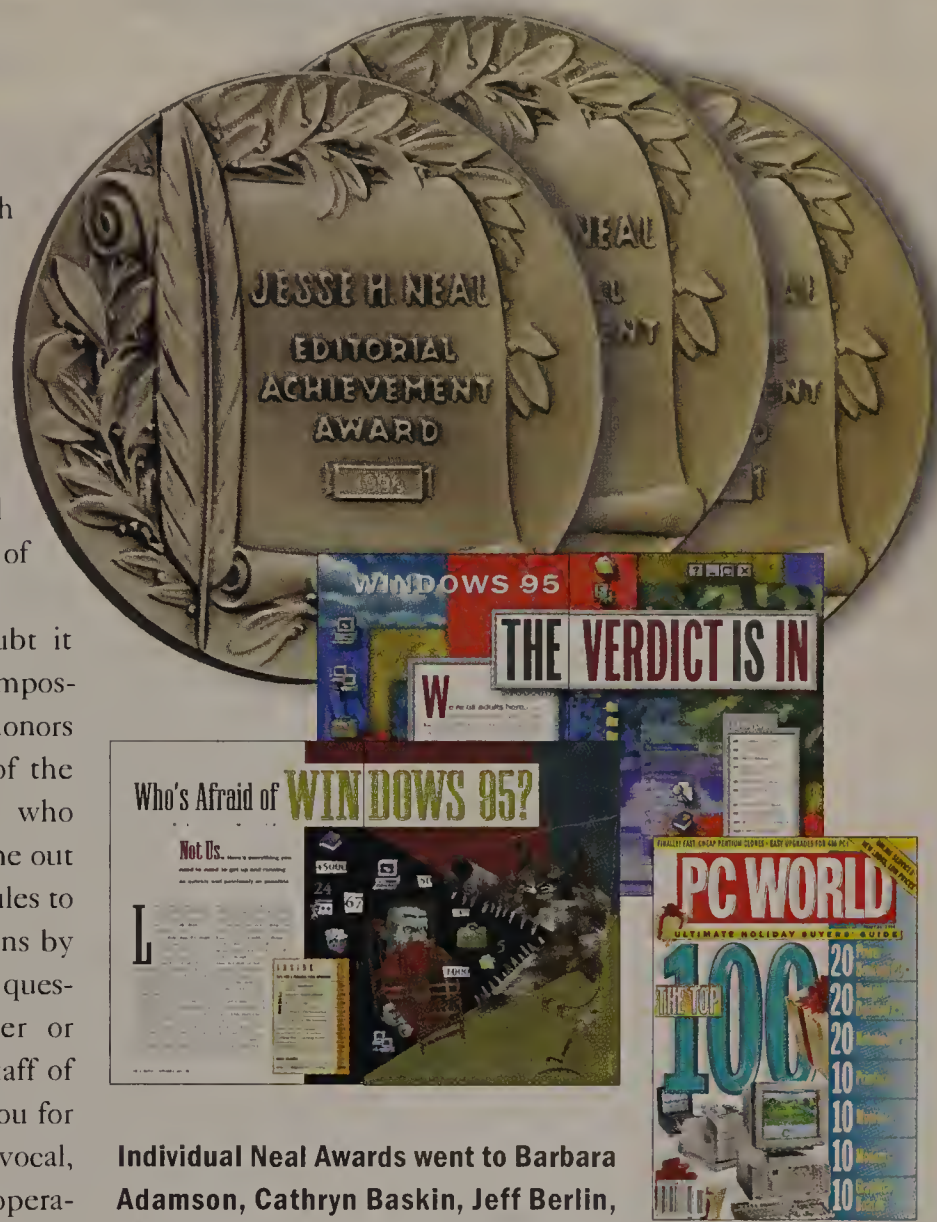
Your Help, Our Reward

PC World's editorial staff and research department make an enormous effort to find out what you want to know and how you like to see it presented. Every month we select 350 readers at random to represent your viewpoints, then ask these random representatives which articles they read and how valuable they found each one. From the readership and value rating, we calculate a performance index for every article. We strive mightily to improve performance indexes over time.

Each year we conduct a number of surveys by mail, usually sampling 1000 or more readers to represent you, and ask these representatives to tell us which topics are of greatest interest and what you want to know about each. We hold reader focus groups in different parts of the country to gain insight into your attitudes toward computer magazines in general and toward *PC World* in particular. We conduct additional surveys through third-party research companies, and we do not tell respondents that they have been selected because they are *PC World* readers. We proceed this way so no one will be tempted to spare our feelings when telling us what you like and dislike in this and other computer magazines.

One of the rewards of devoting such serious attention to editorial research has been bringing more of you to *PC World:* Your numbers have increased from 582,000 in 1991 to 1,020,000 today. But taking your needs seriously has brought us other rewards as well. In 1995, *PC World* became the first big-budget magazine since 1981 whose staff won three Jesse H. Neal Editorial Achievement Awards from the American Business Press in a single year. And this year on March 28, *PC World* became the first magazine in the 42-year history of the Neal Awards whose staff has won three such awards in two consecutive years. *PC World* competed in six of this year's eight categories. We won in three of them and received certificates of merit in two others.

We have no doubt it would have been impossible to win these honors without the help of the thousands of you who generously took time out of your busy schedules to answer our questions by telephone or fill out questionnaires on paper or disk. The entire staff of *PC World* thanks you for being the most vocal, responsive, and cooperative million-plus readership that any magazine could ask for.



Individual Neal Awards went to Barbara Adamson, Cathryn Baskin, Jeff Berlin, Michael Desmond, Scott Dunn, Steve Fox, Robert Kanes, Michael S. Lasky, Tim J Luddy, Dan Miller, Carolyn Perot, Andy Reinhardt, Randy Ross, Scott Spanbauer, and Lincoln Spector.

Our Neal Award winners this year included the November 1995 issue, for best single issue; "Windows 95: The Verdict Is In" in August, for best subject-related series; and "Who's Afraid of Windows 95?" in September, for best how-to article or series. Our two entries that won certificates of merit were "Buyer Beware: Inflated Claims, Unmet Promises" in May, for best investigative article or series; and "Invasions of Privacy" in November, for best single article.

In addition to those named as winners, we would like to express praise and thanks to our alert and conscientious copy editing staff, headed by Richard Johnson, and to the industrious and imaginative staff of the PC World Test Center, under the guidance of Julian Milenbach. The work of these departments shines through everything we do. *PC World*'s research department, led by Cheryl Brink, has also contributed greatly, serving as an invaluable link between your collective wishes and our editorial efforts.

The articles in this issue were crafted with the same care by the same people for the same readers as our medal winners were. We hope this issue measures up to your high standards. Three weeks from now, we'll be asking 350 of you if it does.

Phil Lemmons

Phil Lemmons, Editor in Chief

With their extraordinary lightweight design, the new MultiSync® MT600 and MT800 projectors can go anywhere you can go. Down the hall, or down the road.

And thanks to their uncanny ability to project bright, crisp and evenly illuminated images, you no longer have to sacrifice image quality for portability.

MultiSync MT800
16.2"w x 5.9"h x 12.7"d, 17.6 lbs.

You see, MultiSync MT™ projectors deliver full-color, high-resolution images that can be adjusted to as large as 300" diagonally. A simple task via a remote that

MultiSync MT600
16.2"w x 5.9"h x 12.7"d, 16.5 lbs.

EXACTLY HOW PORTABLE ARE THE GRIP THE SIDES OF THIS MAGAZINE

Visit our new web site at http://www.nec.com

controls your computer and presentation, as well as the projector.

All you have to do is plug in a source, which, due to simple connectivity and compatibility, can be anything from a notebook computer to a VCR.

Now, shouldn't you explain all this to your coworkers? They're still wondering why you strolled past the water cooler holding this magazine out in front of you. To find out how to get a hold of the real thing, call 1-800-NEC-INFO.

SEE, HEAR AND FEEL THE DIFFERENCE.™

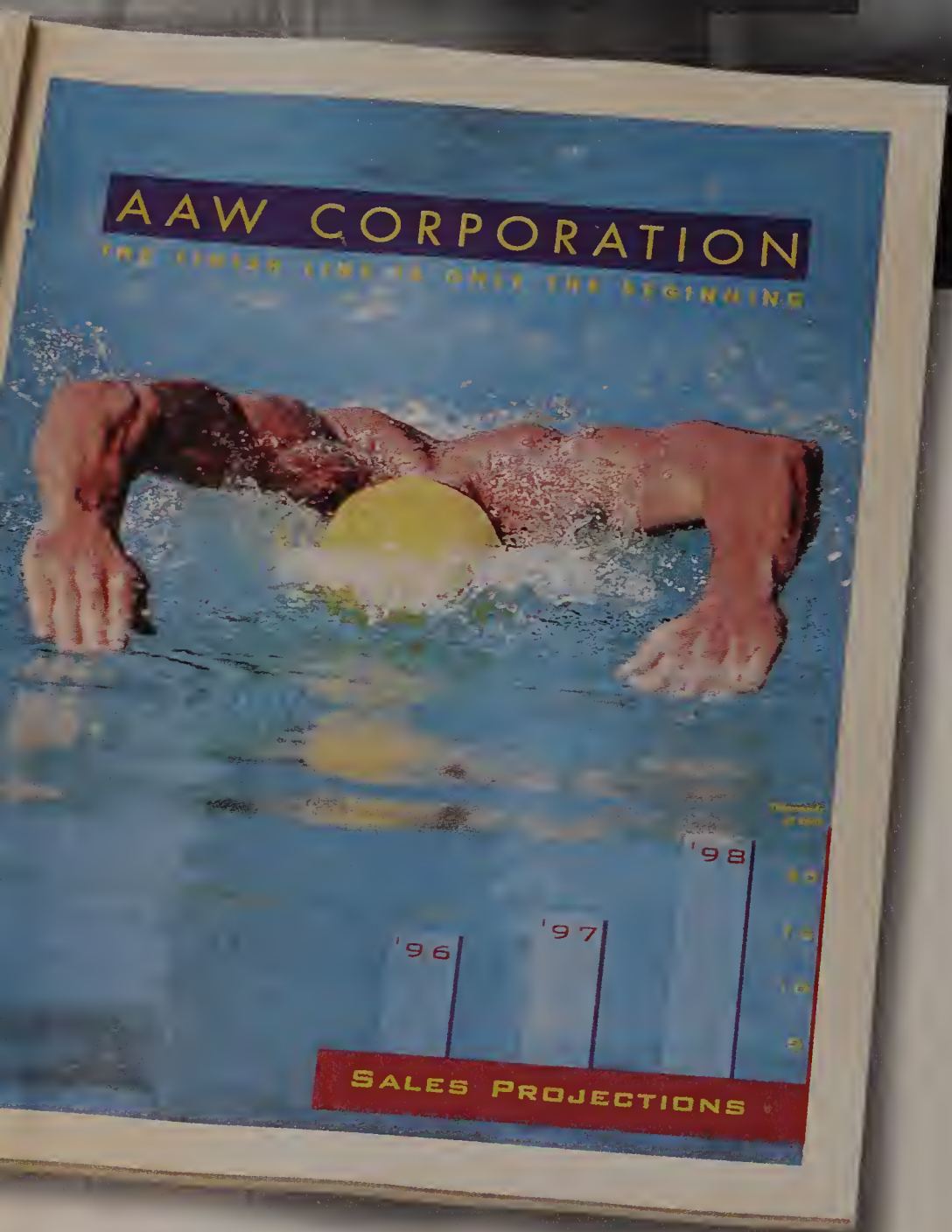
NEC

NEW MULTISYNC MT PROJECTORS? AND WALK AROUND THE OFFICE.

For more information call 1-800-[illegible]-0176 and request document #[illegible]. MultiSync is a registered trademark and MT and See, Hear and Feel the Difference are trademarks of NEC Technologies, Inc. GSA# GS-03F-4070B ©1996 NEC Technologies, Inc. Key [illegible]

Circle 176 on reader service card

In the past, winning new business was a black or white proposition.



Introducing the future.
The HP Color LaserJet 5.

First impressions are important, but business is often won or lost based on last impressions. So why shouldn't your proposals be as impactful and persuasive as possible? With the new HP Color LaserJet 5 printer, they can. Dramatic improvements in technology allow the Color LaserJet 5 to create 1200 dpi equivalent image quality, literally producing millions of permanent solid colors. The Color LaserJet 5 is compatible with all popular software and is fully networkable. Best of all, with its remarkably low cost of ownership, you'll be amazed at how little it costs to add color to your documents. Call 1-800-LASERJET Ext.1443 for some thoroughly convincing print samples. So you can start claiming business victories today.

©1996 Hewlett-Packard Company. See us at http://www.hp.com PE12593

HEWLETT® PACKARD

Doing Windows Well, Top-Notch Customer Avoidance

Managing Files at Warp Speed

April's "Windows 95 at Warp Speed" seemed long overdue. I thought I was the only person who advocated keeping data, files, sound clips, and images in separate data directories (I'm sorry, *folders*). I'm glad to find someone else preaching this religion ["Call to Order: Manage Your Files"].

But you forgot my favorite tip for managing current project files right on the desktop. First I create a new folder by right-clicking the desktop, selecting New•Folder, and naming the folder. Then I can create my correspondence, for example, via my right-click menu's New•Lotus Word Pro doc. All my data can now have long file names and be saved into this folder. I can also drag loose bits, like faxes or scanned art, into the folder.

But you say that after a couple of weeks my desktop must be cluttered? Heck no. I have folders entitled Design Graphics Projects 95 and Design Graphics Projects 96. I can drag the completed client or project folder into the appropriate folder or open one to review past work—and voilà.
James Jackle, Jasper, Indiana

Waiting for Windows 96

Here we go again, another issue devoted to all the apps that run under Windows 95, along with tips and tricks to try to make it workable ["Windows 95 at Warp Speed"].

I know a hardware dealer who will not sell or install Windows 95, having had too many complaints about the initial release. A salesman at Computer City warned me away from upgrading, suggesting I wait for "Windows 96" before upgrading from a very workable Windows 3.11. Letters to the editor in every computer magazine I read suggest that a huge number of people still use Windows 3.*x*. Surely Windows 95 will become the standard. But not as long as it fails to live up to its hype.
George Foxworth, Sacramento, California

Customer Service Hang-Ups

Roberta Furger's article ["PC Reliability and Service: Homeward Bound or Bound for Trouble?" March] was right on the mark. It clarifies how companies can produce high-quality computers but still fall short in serving their customers. No matter how good a company's product may be, I tend to lose faith when I find myself playing telephone tag, and I end up with the impression that resolution of problems is not the true objective.

One might think the customer service department would more aptly be named the customer avoidance department. And avoidance might be the advice I would give my colleagues when asked to recommend an otherwise reputable computer manufacturer.
Scott Glaser, New York

Electronic Transactions: Not Always Cheap

Theresa W. Carey did a commendable job of comparing Quicken with Microsoft Money ["Quicken Versus Money," April]. As someone who teaches a college course in money and banking, I was especially interested in her review of online banking services. She correctly points out that the price of online banking is a major issue, particularly when compared with the price of putting a check in an envelope.

However, she omitted the important fact that many businesses are not set up to receive electronic payments. In such cases, a bill-paying service must issue a paper check anyway, but the check will be mailed without the payment coupon you usually enclose when you pay a bill the traditional way. This missing coupon can delay the posting of your payment. At worst, the payment may not be recorded at all.
Tony Lima, Hayward, California

GORDON STUDER

Author's response: Both Money and Quicken contain provisions for printing your customer account number and other identifying details you want on the check. You can also include a transaction ID (such as invoice number) with each payment. I've paid my mortgage via electronic check for a number of years now, and the payment's never gotten lost. —*Theresa W. Carey*

Cinema Verité

Your article on the upcoming digital video drives ["DVD Drives: Giant CD-ROMs and Movies, Too," *Top of the News*, April] was exciting, but it also made me think of a couple of things.

As a reminder, a PC is no substitute for an entertainment device. The author mentioned using a 17-inch monitor to watch movies. A 17-inch monitor alone costs about the same as a 31-inch TV. Which would you rather watch

movies on? Also, unless you hook your PC up to a good stereo, you won't get the 3-D sound and 10-band equalizer power that a good home entertainment center—which costs less than a PC—can deliver.

My second point: If the entertainment industry influenced the development of DVD, why will the discs be only 133 minutes long? I'll still have to put a second disc in to watch many great movies.
Han Nguyen, Alexandria, Virginia

Lopsided Perspective

I found "Home Office Before and After" [*Small Office, Home Office*, April] to be very well written and illustrated. However, I do have one question: How does Roberta Furger load and unload the CD-ROM drive in the desktop Gateway 2000 PC that she has placed on its side?
Harold Porter, Searcy, Arkansas

Author's response: I tried different locations for my computer before deciding to keep it on the floor (which is where I had it in my office at *PC World*, as well). Loading CDs is a little tricky. But I've become quite adept at holding the disc in place as the caddy closes to make sure it doesn't fall out. Is this an inconvenience? Sure. But it works, and until I buy a minitower, or a desktop PC with a smaller footprint, I'll put up with the hassle rather than lose valuable desk space. —*Roberta Furger*

Corrections and Clarifications

Contrary to what was implied in "Incredible Expanding Drives" (March), a SCSI version of the Fujitsu DynaMO 230 Parallel Port is indeed available.

The World Wide Web address for Parsons Technology (http://www.parsonstech.com/infocentral/new.html) appeared incorrectly in April's *Bug Watch*.

In April's *Online* column, the Web address for the Genealogical Guide to Ireland was listed incorrectly. It ought to have read http://www.bess.tcd.ie/roots/prototyp/genweb2.htm.

"Internet PCs: Next Wave or Nonsense?" (April) should have stated that the Bandai Pippin Atmark device can also be hooked up to a CRT monitor.

The correct telephone number for Circle Inc. (*Home Office*, April) is 800/635-8558.

PC World regrets the errors.

Letters *welcomes your responses and ideas.* *See page 14 for contact information.*

AND THE WINNER IS...

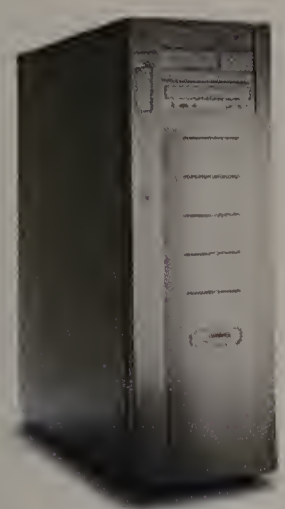
PC World congratulates the following readers who won prize systems when their returned Reliability and Service Monitor surveys were selected at random:

- Roy Schild, Berryville, Virginia, July 1994
- Wen Schraeder, Appleton, Wisconsin, August 1994
- Gordon Gerhard, Winnipeg, Manitoba, Canada, September 1994
- Brad Berning, Lakewood, California, October 1994
- James Collier, Wilmington, North Carolina, November 1994
- Shawn Heffner, San Jose, California, December 1994
- Jon Olson, Capitola, California, January 1995
- William Castelum, Woodland Hills, California, February 1995
- Michael Fidele, Renovo, Pennsylvania, March 1995
- Tony Magio, Dover, New Hampshire, April 1995
- Tim Fitzpatrick, Batavia, Illinois, May 1995
- Anthony Cariati, Hamburg, New Jersey, June 1995
- Joseph Kovach & Associates, Calumet City, Illinois, July 1995
- John Wertz, Johnstown, Pennsylvania, August 1995
- Raf Piemonte, Wyckoff, New Jersey, September 1995
- Michael Shanahan, Royal Palm Beach, Florida, October 1995
- James Bell, Waldorf, Maryland, November 1995

Now is a particularly good time to buy a Compaq ProLiant 4500 server. (As if there were ever a bad time.) That's because from now until June 30, Compaq will give you an

Buy Any Qualifying Compaq Server Now And We'll Throw In An Extra Processor Board.

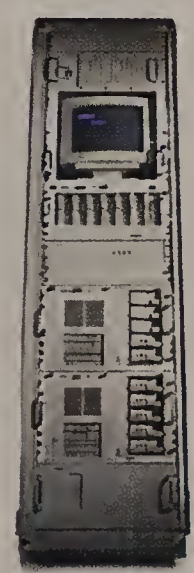
(Free)



Compaq ProLiant 4500 Tower

additional processor board at no additional cost.* Depending on the model you buy, that can mean up to an 80% boost to the server's performance. And if you decide later to upgrade to Pentium® Pro technology, you can protect your investment with our premium-free upgrade program.†

To take advantage of this offer, call your local reseller today. Or call us at 1-800-410-8458 to locate the Compaq Reseller nearest you. Buying a ProLiant server is always a smart decision. Buying one now could get you a corner office.



Compaq ProLiant 4500 Rack

COMPAQ

Has It Changed Your Life Yet?

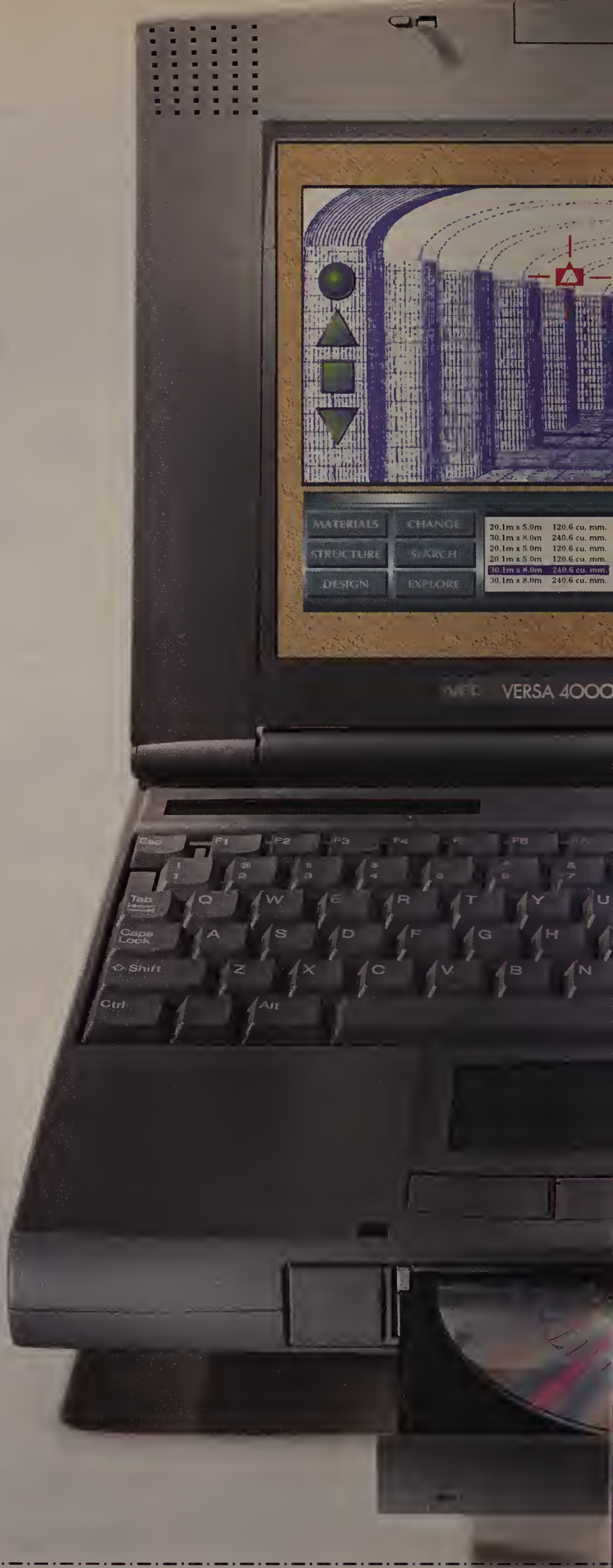
intel inside pentium® PROCESSOR

©1996 Compaq Computer Corporation. All rights reserved. Compaq registered U.S. Patent and Trademark Office. ProLiant is a registered trademark of Compaq Computer Corporation. The Intel Inside logo, Pentium and Pentium Pro are registered trademarks of Intel Corporation. Offer valid in the U.S. during 1996 only. *Qualifying models are ProLiant 4500 and 4500R 5/100 MHz and 5/133 MHz only. †Applies to all ProLiant 4500R models. Limit one upgrade per server. For more details on this offer call 1-800-410-8458. For more information on our full line of servers, call 1-800-345-1518 or reach us on the Web at www.compaq.com.

Circle 61 on reader service card

Designed for Microsoft® Windows® 95

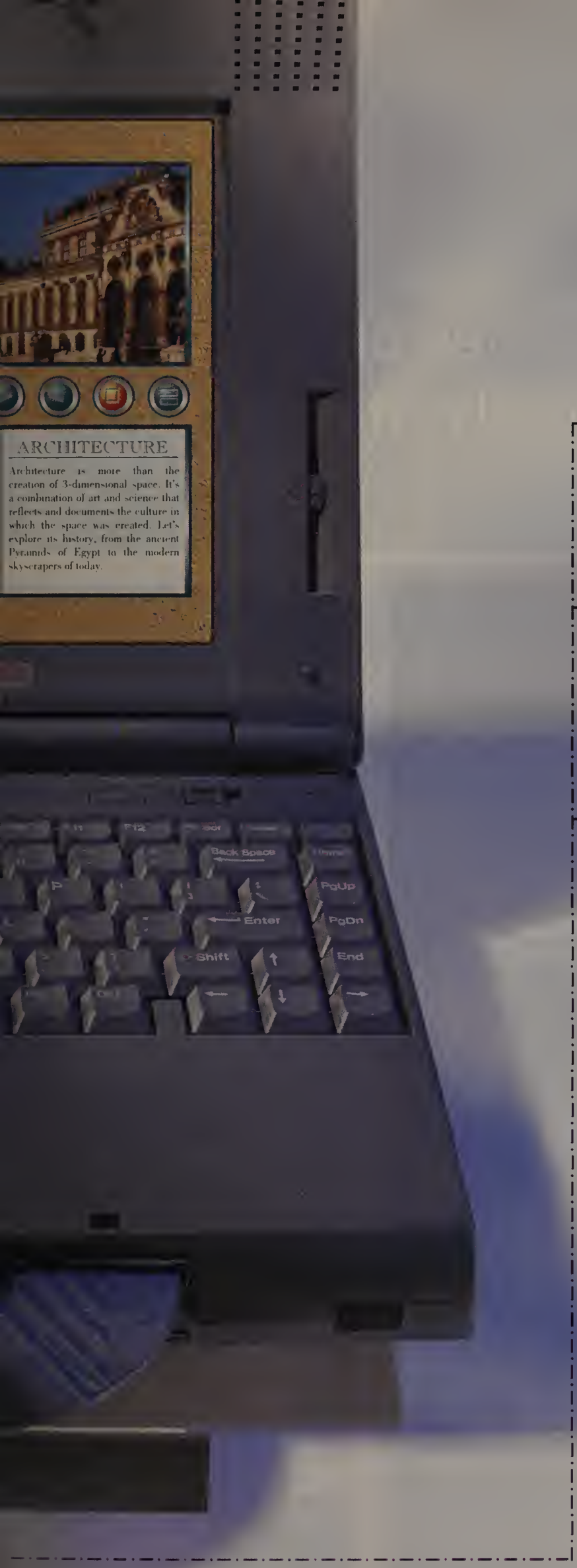
THERE ARE TIMES WHEN YOU NEED THE MOST ADVANCED MULTIMEDIA NOTEBOOK ON THE MARKET.



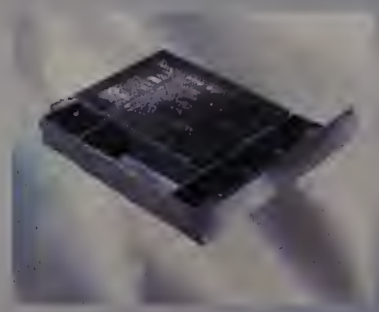
VersaBay™ II technology lets you configure the Versa® 4000 at a moment's notice. Need multimedia? Slip in the CD-ROM.

intel inside pentium PROCESSOR

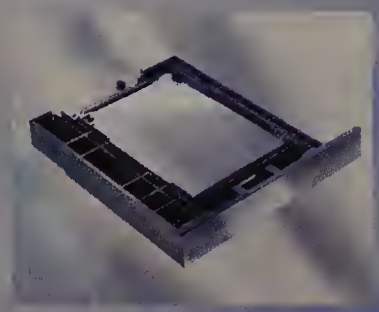
*The Versa 4000 is available in a variety of configurations with 75, 90 and 120MHz Pentium processors. For info sent via fax, call NEC FastFacts™ at 1-800-366-0476 or look us up at http://www.nec.com. Versa is a registered U.S. trademark, VersaBay, VersaGlide, FastFacts, and See, Hear and Feel the Difference are trademarks of NEC Technologies, Inc. The Intel Inside logo and Pentium are registered trademarks of Intel Corp. The Designed for Windows 95 logo and Windows 95 are trademarks of Microsoft Corp. User may choose one of two preinstalled operating systems: Windows 95 or Windows for Workgroups 3.11. All other trademarks are properties of their respective owners. ©1995 NEC Technologies, Inc. NEC GSA #GSOOK94AGS5241PSO1. Key #11142



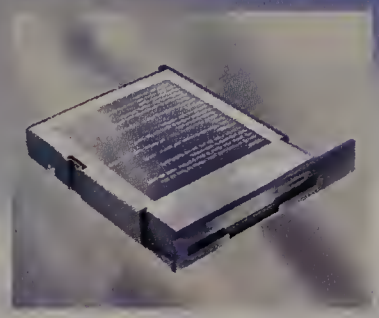
AND TIMES WHEN YOU DON'T.



For more power, slide in a second state-of-the-art lithium-ion battery.



Want additional storage? Snap in a second hard drive.



For software installation, insert the 1.44MB floppy disk drive.

Introducing the NEC Versa® 4000. Along with the innovative VersaBay II, the Versa 4000 features a 10.4" high-resolution screen, full-motion video support, SoundBlaster® Pro compatibility, two built-in speakers and a microphone. So what do you get when you combine all that with its 120MHz Pentium® processor*, 1GB hard drive, 8 - 40MB RAM, a lithium-ion battery, a VersaGlide™ pointing device and hot-swappable PC Cards? Simple. Not just the most advanced notebook for multimedia, the most advanced notebook, period. Call 1-800-NEC-VERSA.

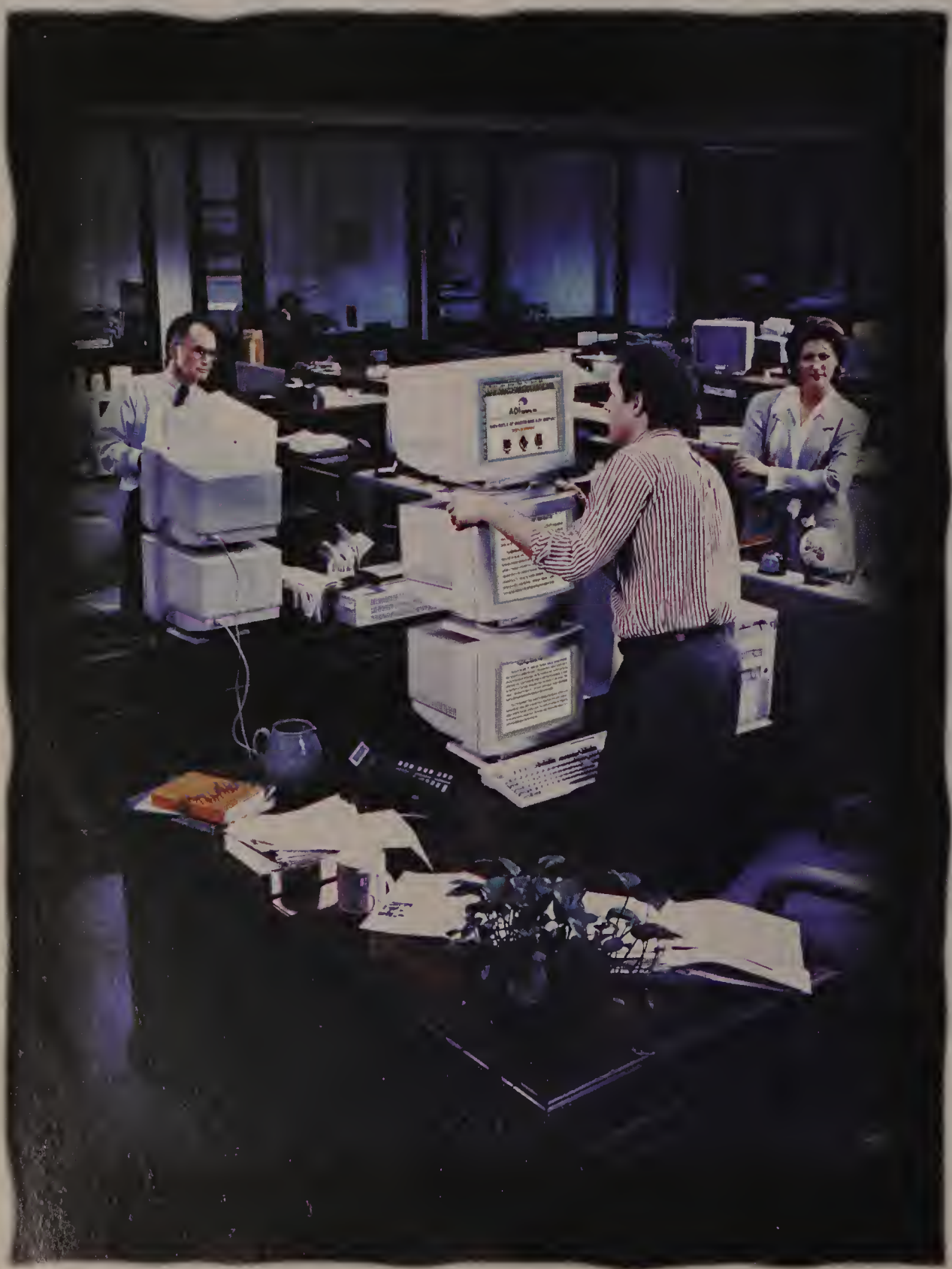
SEE, HEAR AND FEEL THE DIFFERENCE.™

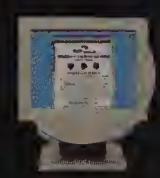
NEC

Circle 203 on reader service card

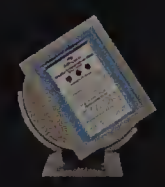
ONE OF THE MANY REASONS MORE AND MORE PEOPLE NEED PIVOT MONITORS.

They're describing their ordinary monitors as "vertically challenged."

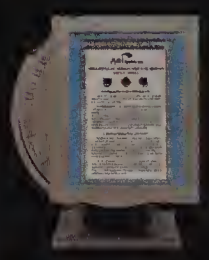




Don't blame your monitor for being short and wide. It's the way most of them are built. Most, except for the MicroScan™ 17X. With a simple swivel, the MicroScan 17X provides more vertical viewing area than any other 17" and even 21" monitors. Just imagine how much easier that would make working with Windows,® web pages, or any kind of applications. Once you see the MicroScan 17X pivot monitor in action, you may never turn back. To find out, call:



1-800-228-0530.



The MicroScan 17X features a 17" CRT (16" diagonal viewing area), 1024 x 768 resolution, 76Hz flicker-free refresh rate and .28mm dot pitch.

ADI

© 1996 ADI Systems, Inc. 2115 Ringwood Avenue, San Jose, CA 95131. MicroScan is a trademark of ADI Systems, Inc. All other brands or product names are trademarks of their respective companies. http://www.adi-online.c

Stop PC Thieves in Their Tracks

Why is the person in the photo at right incognito? Because she was twice the victim of thieves who broke into her office and stole thousands of dollars' worth of computer equipment.

This month the president of a business consulting firm in Houston, Texas, tells how the robberies taught her the value of office security and off-site data storage. —*Editor*

People in Glass Houses

If you have expensive computer equipment, you must protect it *and* the information that resides on it. It's easy to get a false sense of security when you back up the data on your hard drive. If your system crashes, you just reinstall the backup, right? But think about what you would do if burglars broke into your office, absconding with the computers and everything on them. That's what happened to me.

The scene: My computer consulting firm, located on the ground floor of a six-story glass building in one of the suburbs of Houston. All the people in the company enjoy working with the miniblinds open to let in the daylight. We also work late into the night and don't think twice about keeping the blinds open—of course, any passerby can look into the office and see our sophisticated computer layout.

The time: In January 1995, around 2:30 in the morning, someone smashed a brick through our window and brazenly walked right through the glass into our office.

At the time, we were running a dozen top-of-the-line Acer, Compaq, and NEC Pentium- and 486-based servers, laptops, and desktop PCs, as well as several brand-new 20-inch NEC and Sony monitors. Because we were testing the performance of some of these systems, a few high-end units were on loan to us from the manufacturers.

The crooks knew what they were after, cherry-picking the Pentiums and high-end 486s and leaving the aging 386s and other older equipment behind. They took about $70,000 worth of computer equipment from our office alone. They also hit an office across the hall for an estimated $20,000 to $30,000 of equipment. The building had minimal security on the front door, but it proved worthless because the burglars came in through the window instead.

While the shock of this disaster was bad enough, it wasn't nearly as horrific as the administrative nightmare that followed. It took eight months and a staff of four people just to settle the insurance claims. We also had to deal with the vendors of the stolen equipment, some of whom required that we repay them for the loss.

Because we're religious about backing up our data and keeping our backups off-site, the thieves didn't make off with all our bread-and-butter data as well. But the company across the hall, which hadn't done so, lost all its information and felt a far worse sting.

Back for Second Helpings

After the robbery, my company installed a burglar system in the hallway. Anyone entering after-hours would set off an alarm that calls the police.

That made us rest easier for two months, until we were robbed again. This time the thieves came through another window and stole an $8000 color laser printer. And yes, the alarm did go off when they reached the hallway, but unfortunately they were gone in under 90 seconds, and the police arrived a minute later.

Nobody knows the trouble she's seen: Our writer's office was robbed twice by crafty burglars.

After this second hit, we asked the landlord for help. He told us that office security was the renters' responsibility because there was no security clause in the lease. He wasn't quibbling about the cost of installing a good security system; to him, the issue was liability. He felt that if he upgraded security and another robbery occurred, the renters could sue him.

We were damned if we were going to let this happen again, so we started asking for bids from several different security companies. We found it was good to ask a number of security specialists for their ideas, because some companies offer myriad alternatives and get personally involved in making sure your security is airtight, while others offer only ho-hum, obvious "install this, install that" solutions.

DAN FORD CONNOLLY

AnthroCarts®!

AnthroCarts are *so* flexible. You have dozens of shapes and sizes to choose, plus over 50 accessories to configure your cart exactly the way *you* want.

And they have a Lifetime Warranty! Made of steel and high density particle board, these AnthroCarts are as tough as nails.

See them all in our catalog, then call us direct to order. We'll ship to you the very next business day!

Call for your free catalog:

800-325-3841

6:00 AM to 6:00 PM PST, M–F

ANTHRO®

Anthro Corporation®
Technology Furniture®
10450 SW Manhasset Dr.
Tualatin, OR 97062
Fax: 800-325-0045
http://www.anthro.com

Since 1984. Prices from $299. For a lower cost line for the home, ask for our SOHO catalog. GSA contract. Available for OEM applications. Anthro, AnthroCart and Technology Furniture are registered trademarks of Anthro.

Once we selected a vendor, we spent $3000—a comparative drop in the bucket for security equipment, we're told—on a surveillance system from Westinghouse Security Electronics, dramatically enhancing our office's security. We installed two sets of sensors in each room: One monitors the windows and doors for breaks; the other monitors motion, in case someone comes through the ceiling. Now every square inch of the office is monitored around the clock, and we've had no further break-ins.

Our Take-Away

We learned several important lessons from this experience. First, the extra investment in security is worth every penny, because it's nothing compared to the cost and hassle of a loss. Second, we learned from our neighbor's experience how important it is to have a disaster recovery plan: regularly scheduled backups for all data, with the backup media stored *off-site*.

Now we know that if we ever do move, we'll have to get a security clause written into the new lease. Such a clause should contain specific wording about security measures for which the landlord will be responsible—such as providing round-the-clock electronic surveillance. If the landlord doesn't agree to this, at least get the details about what will and will not be covered. If the landlord refuses to put a security clause in your lease, you're on your own.

Of course, no security system is foolproof, but we rest easier knowing that we have a system with a 99.9 percent chance of working if we should ever be robbed again. Despite the bitter lessons we had to learn, we know that taking extra security precautions is, in this day and age, simply a responsible thing to do. And yes, we still keep our blinds open.

Edited by Bronwyn Fryer

- **Westinghouse Security Electronics**
  800/232-9090
  Reader service no. 620

Bronwyn Fryer is a contributing editor for PC World. *If you use PCs to manage people and other resources in a business environment, we want to hear from you—we pay $300 for published columns. See page 14 for contact information.*

Only from South Dakota

(Prairie dog
shown actual size)

(Holstein cow
shown actual size)

The leader in desktops & portables
now brings you something big.

Gateway 2000 has pioneered a whole new computer category that merges PC with TV.

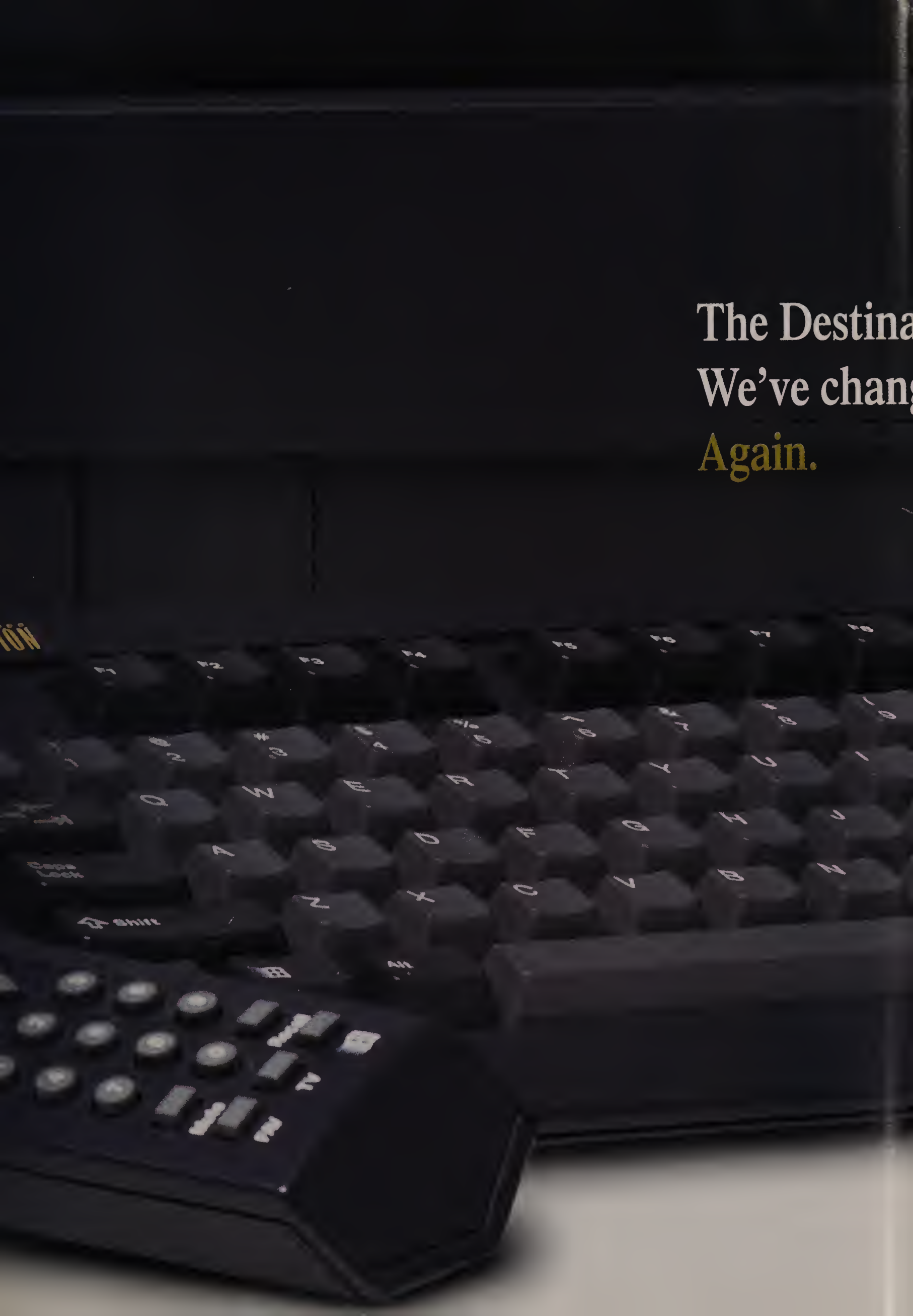
We call it the Destination Big Screen PC. A group-computing, TV-viewing, multimedia-blasting, Internet-cruising mothership from the couch. Or from anywhere else in the room thanks to the 31-inch monitor, wireless keyboard and Field Mouse™ remote c

It's all part of Gateway's tradition of bringing value, service and technological leadership to customers first. To find out more Destination Big Screen PC and our whole family of desktop and portable PCs, give us a call. We'll give you the big picture.

GATEWAY 2000
DESTINATION

(Gateway's Destination Big Screen PC monitor
shown actual size)

that looks great
ontrol.
about the


The Destina
We've chang
Again.

tion Big Screen PC.
ged the way you look at computers.

888-200-0633

Multimedia Systems

P5-120 FAMILY PC™

- Intel® 120MHz Pentium® Processor
- 16MB EDO Performance DRAM
- 850MB 10ms EIDE Hard Drive
- 1MB DRAM, 64-Bit PCI Graphics Accelerator
- 8X CD-ROM Drive/3.5" Diskette Drive
- 16-Bit Gateway Sound Card
- Altec® Lansing ACS-40 Speakers
- TelePath® 28.8 Fax/Modem
- CrystalScan® 15 .28dp Monitor (13.9" viewable)
- 7-Bay Mini Tower Case
- 104+ Keyboard & MS Mouse 2.0
- Microsoft® Windows® 95
- Generations II Software Collection

$1999

P5-133 FAMILY PC

- Intel 133MHz Pentium Processor
- 16MB EDO Performance DRAM
- 256K Pipelined Burst Cache
- 1.62GB 9ms EIDE Hard Drive
- 2MB DRAM, 64-Bit PCI Graphics Accelerator
- 8X CD-ROM Drive/3.5" Diskette Drive
- 16-Bit Gateway Sound Card
- Altec Lansing ACS-40 Speakers
- TelePath 28.8 Fax/Modem
- Vivitron™17 .26dp Monitor (15.9" viewable)
- 12-Bay Tower Case
- 104+ Keyboard & MS Mouse 2.0
- MS Windows 95
- Generations II Software Collection

$2549

P5-166XL

- Intel 166MHz Pentium Processor
- 16MB EDO Performance DRAM
- 512K Pipelined Burst Cache
- 2.5GB 11ms EIDE Hard Drive
- Matrox® 2MB WRAM Graphics Accelerator
- 8X CD-ROM Drive/3.5" Diskette Drive
- 16-Bit Ensoniq® Wavetable Sound Card
- Altec Lansing ACS-400 Speakers w/ ACS-250 Subwoofer
- TelePath 28.8 Fax/Modem
- Vivitron17 .26dp Monitor (15.9" viewable)
- 12-Bay Tower Case
- 104+ Keyboard & MS Mouse 2.0
- MS Windows 95
- MS Office 95, Professional Edition*
- Generations II Software Collection

$3299

Generations II SOFTWARE COLLECTION

- Microsoft Encarta® 96
- MS Cinemania® '96
- MS Julia Child: Home Cooking with Master Chefs
- MS Bob™ for Gateway 2000
- MS Works 95
- MS Publisher 95
- MS Money 4.0
- MS Golf 2.0
- MS Music Central™ 96
- MS CD Sampler
- MS Entertainment Packs 1-4 (31 fun games!)
- Ca$h Graf Home Office Plus™
- Mayo Clinic® Family Health Book
- Mediamatics Arcade™ MPEG Playe
- The Masters®: Interactive Journey Through Its 60-Year History, for M

Destination Big Screen PCs

(Currently available for sale only in the U.S.)

D5-120

- P5-120 Family PC config above, excluding speakers, w/ Destination Big Screen PC upgrade (details on next page) replacing corresponding components and software

$3599

D5-133

- P5-133 Family PC config above, excluding speakers, w/ Destination Big Screen PC upgrade (details on next page) replacing corresponding components and software

$3799

D5-166

- P5-166 XL System config above, excluding speakers, w/ Destination Big Screen PC upgrade (details on next page) replacing corresponding components and software

$4399

Professional Systems

P5-100

- Intel 100MHz Pentium Processor
- 16MB EDO Performance DRAM
- 850MB 10ms EIDE Hard Drive
- 1MB DRAM, 64-Bit PCI Graphics Accelerator
- 8X CD-ROM Drive/3.5" Diskette Drive
- CrystalScan15 .28dp Monitor (13.9" viewable)
- 7-Bay Mini Tower Case
- 104+ Keyboard & MS Mouse 2.0
- MS Windows 95
- MS Office 95, Professional Edition*

$1749

P5-133

- Intel 133MHz Pentium Processor
- 16MB EDO Performance DRAM
- 256K Pipelined Burst Cache
- 1.62GB 9ms EIDE Hard Drive
- 2MB DRAM, 64-Bit PCI Graphics Accelerator
- 8X CD-ROM Drive/3.5" Diskette Drive
- Vivitron15 .26dp Monitor (13.9" viewable)
- 7-Bay Mini Tower Case
- 104+ Keyboard & MS Mouse 2.0
- MS Windows 95
- MS Office 95, Professional Edition*

$2099

P5-166

- Intel 166MHz Pentium Processor
- 16MB EDO Performance DRAM
- 256K Pipelined Burst Cache
- 2.5GB 11ms EIDE Hard Drive
- 2MB DRAM, 64-Bit PCI Graphics Accelerator
- 8X CD-ROM Drive/3.5" Diskette Drive
- Vivitron17 .26dp Monitor (15.9" viewable)
- 12-Bay Tower Case
- 104+ Keyboard & MS Mouse 2.0
- MS Windows 95
- MS Office 95, Professional Edition*

$2699

G6-200

- Intel 200MHz Pentium Pro Process
- 32MB DRAM
- 256K Internal Cache
- 2GB Fast SCSI 9ms Hard Drive
- Matrox 4MB WRAM Graphics Accelerator
- 4X SCSI CD-ROM Drive
- 3.5" Diskette Drive
- Vivitron17 .26dp Monitor (15.9" viewable)
- 12-Bay Tower Case
- 104+ Keyboard & MS Mouse 2.0
- MS Windows NT® Workstation 3. or MS Windows 95
- MS Office 95, Professional Editior

$4599

All desktop systems standard with Gatewa Gold™ Service & Support, which includes 3 limited warranty. All portable PCs standa 1-year limited warranty. Call or write for copy of our warranty.

The Gateway Solo line starts at 5.4 lbs. Weight includes 8MB RAM, 810MB hard drive, Lithium Ion battery & option bay cover.

** MS Office 95, Professional Editior includes Word, Excel, PowerPoint® presentation graphics program, Schedule+, Access database and Bookshelf® '95.*

Gateway 2000® Solo™ Portable PCs

S5-75XL

- 10.4" SVGA Color Display
- Intel 75MHz Pentium Processor
- 8MB RAM (expandable to 40MB)
- 256K Pipelined Burst Cache
- 540MB Hard Drive
- Modular 4X CD-ROM Drive
- Modular 3.5" Floppy Drive
- Integrated 16-Bit Sound with Stereo Speakers
- 1MB Video RAM
- Lithium Ion Battery & AC Pack
- 86-key MS Windows 95 Keyboard
- MS Windows 95
- MS Works 95
- Carrying Case

$2899

S5-120XL BEST BUY

- 11.3" SVGA Color Display
- Intel 120MHz Pentium Processor
- 40MB RAM
- 256K Pipelined Burst Cache
- 1.2GB Hard Drive
- Modular 4X CD-ROM Drive
- Modular 3.5" Floppy Drive
- Integrated 16-Bit Sound with Stereo Speakers
- 28.8 PCMCIA Fax/Modem
- 1MB Video RAM
- Lithium Ion Battery & AC Pack
- 86-key MS Windows 95 Keyboard
- MS Windows 95
- MS Office 95, Professional Edition*
- Carrying Case

$5599

Toll free from Canada 800-846-3609

Toll free from Puerto Rico 800-846-3613

Printed on recycled paper with soy inks

GATEWAY2000

"You've got a friend in the business."®

888-200-0633

http://www.gw2k.com

intel inside pentium PROCESSOR

610 Gateway Drive • P.O. Box 2000 • N. Sioux City, SD 57049-2000 • Phone 605-232-2000 • TDD 800-846-1778 • Fax 605-232-2023 • FaxBack 800-846-4526 • Internation FaxBack Access 605-232-2561 • Component Add-On Sales 800-846-2080 • Sales Hours: 7am-10pm Weekdays, 9am-4pm Saturdays (CDT)

Destination Big Screen PC Upgrade

In the market for a multimedia PC? Consider upgrading to a Big Screen PC. Just like all our computers, the Destination Big Screen PC is built to order, with your choice of Pentium® processor, RAM, hard drive, CD-ROM drive, diskette drive, and fax/modem.

The following Destination components replace the corresponding standard components of the Family PC and XL multimedia systems:

- **Graphics Accelerator**: Destination 2MB VRAM Graphics Accelerator w/ Cable-Ready TV Tuner
- **Sound Card**: 16-Bit Hi-Fi Wavetable Audio Card
- **Monitor**: Destination31 VGA Monitor (31" viewable)
- **Case**: 7-Bay Charcoal-Colored PC Case
- **Keyboard**: Wireless Keyboard with Integrated EZ Pad™ Pointing Device
- **Mouse**: Field Mouse™ Remote with Integrated Trackball and Four-Channel RF Receiver
- **Software**: Destination Software Collection
  (Call about this package of software specially selected for the Destination Big Screen PC's extraordinary multimedia capabilities)
- **Speakers**: Not included. The Destination Big Screen PC has been designed for easy integration with your existing stereo system. Need a high-quality sound system? See option at right.

Option

- **harmon/kardon High-Fidelity Sound System**

Seven-piece Dolby Pro Logic® Surround Sound speaker system including AVR-10 audio/video receiver with remote, subwoofer, center channel, and four satellites for the ultimate home stereo experience. **$699**

Bigger-Than-Life Extras!

Multimedia/Communication

- Altec™ Lansing ACS-250 Subwoofer **$75**
  (upgrade from PCs that include Altec ACS-40 speakers)
- Altec ACS-400 Speaker System w/ ACS-250 Subwoofer **$120**
  (upgrade from PCs that include Altec ACS-40 speakers)
- TelePath® 28.8 Fax/Modem **$149**

Networking

3Com® Ethernet Adapters

- 16-Bit Triple Media Card with BNC, AUI and RJ-45 connectors **$99**
- 16-Bit Card with only RJ-45 connector **$79**

SMC® ISA Ethernet Adapters

- 16-Bit Triple Media Card with BNC, AUI and RJ-45 connectors **$79**
- 16-Bit Card with only RJ-45 connector **$59**

Printers

- Epson® Stylus™ Color IIs Ink Jet Printer **$219 less $30 rebate**
- Hewlett®-Packard DeskJet 600C Ink Jet Printer **$259**
- Epson Stylus Color II Ink Jet Printer **$299 less $30 rebate**
- Hewlett-Packard LaserJet 5L Printer **$479**
- Hewlett-Packard LaserJet 5P Printer **$849**

Software

- Kid's BackPack™ III
  NEW Includes Schoolhouse Rock!™: Grammar Rock™; Sesame Street: Get Set to Learn®; Math Blaster 2®: Secret of the Lost City; Imo & The King™; Putt-Putt® Goes To The Moon™; and Gateway cow-spotted backpack. **$59**
- Finance Pack *(U.S. Shipment Only)*
  Includes Quicken® Deluxe 5, Quicken Financial Planner,™ Quicken Family Lawyer,™ and Quicken Parents' Guide To Money.™ **$69**
- Gateway Gamer's Pack
  Includes Command & Conquer,™ Virtual Pool™: Straight/8, The Journeyman Project 2®: Buried in Time,™ Terminal Velocity,™ Primal Rage,™ and a Gravis™ GamePad.™ **$79**
- Flight Pack II
  Includes Comanche™ 2.0, EF 2000,™ Su-27 FLANKER,™ Flight Unlimited,™ U.S. Navy Fighters,™ and joystick. **$99**
- NEW Sports Pack II
  Tony La Russa Baseball 3,™ Indy Car® Racing II, PGA Tour® 96, Quarterback Attack,™ Alexi Lalas Red Hot Soccer, and a Gravis GamePad. **$79**

Service & Support

Gateway Gold™ Premium

- Extended Three-Year On-Site Agreement*
- Priority 800 Number For Access To Technical Experts

With system purchase **$99** / Within current on-site service agreement **$129**

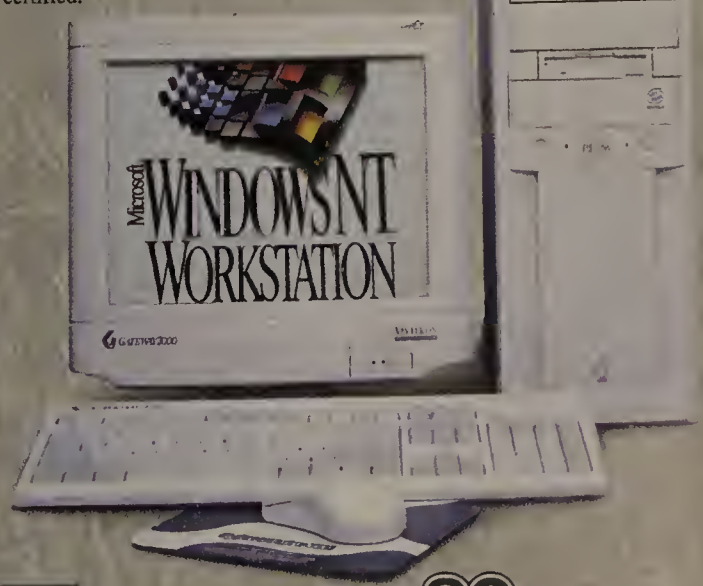
**On-site service for desktop and tower systems is available to most U.S. and Canadian locations after determination by a Gateway tech that you need it. On-site service is provided by PC Technology Services Inc. Write or call for a free copy of our on-site service agreement.*

Call the Gateway 2000 component add-ons division at 800-846-2080 for our complete line of extras for Gateway customers. Sales Hours: 7am-10pm Weekdays (CDT).

GSA Schedule # GS-00K-94-AGS-5150-PS01

ISO 9002 SGS — Gateway 2000 Manufacturing, North Sioux City, South Dakota, is ISO 9002 certified.

P5-166 Professional System shown with optional Microsoft® Windows NT® operating system, available pre-installed on any Gateway desktop PC for only $99.



Gateway accepts most major credit cards and C.O.D. terms, with net 30-day terms and leasing options available to qualified commercial customers. You can also apply for the Gateway 2000 DuoLine™ MasterCard® card, issued by Dial National Bank, Des Moines, Iowa.

GATEWAY2000

"You've got a friend in the business."®

888-200-0633

http://www.gw2k.com

90 DAYS NO PAYMENTS

Ask About Our "90 Days No Payment" Program!

© 1996 Gateway 2000, Inc. Gateway 2000, CrystalScan, TelePath, black-and-white spot design, Destination, "G" logo and "You've got a friend in the business" slogan are registered trademarks, and EZ Pad, Family PC, Gateway Gold, Gateway Solo, Gateway 2000 DuoLine and Vivitron are trademarks of Gateway 2000, Inc. The Intel Inside Logo, Intel and Pentium are registered trademarks of Intel Corporation. All other brands and product names are trademarks or registered trademarks of their respective companies. All prices and configurations are subject to change without notice or obligation. Prices do not include shipping or applicable sales tax.

Free Software!*

Presto! PageManager

Most Accurate OCR

One Touch from Scan to Print, Copy, Fax & E-Mail

Scan It!
Click once to scan and store photos or paperwork.

Print/Copy It!
Just Drag & Drop to print, copy, or edit what you scanned.

Fax It!
With Presto! PageManager, you don't need a stand-alone fax machine. Just scan your pages straight to your fax modem!

Drag & Drop It!
Drag & Drop documents to MS Word, Excel, Adobe Photoshop, Corel Draw, Presto! Pro, ViewOffice PowerSuite, etc.

E-Mail It!
Once you scan, you can send your image over electronic mail without leaving the application!

File It!
Save what you're working on in an electronic file cabinet with text search tools.

Other Features
Presto! PageManager offers Text Annotation, Image Editor, Text Editor, and Built-In OCR.

Call Today for Your FREE* Software!

800-670-7167

or

Download Presto! PageManager & Other Presto! Products**

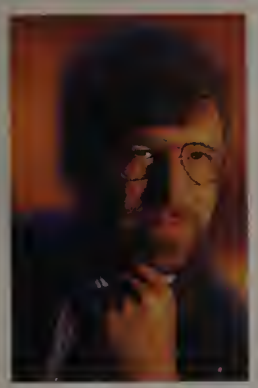
http://www.tophat.com

Circle 158 on reader service card

* There is a non-refundable $9.95 (US) or $19.95 (Canada) shipping & handling charge. Outside US 510-252-0267. ** There is a non-refundable $4.95 charge to download from the Internet. Please have your Visa, Mastercard, or American Express card ready when you call. CD-ROM format. One copy per household. Offer good only in the US and Canada. Information and prices subject to change without notice.

© 1996 NewSoft, Inc. Presto!, Magic Within, and all other Presto! Products are trademarks of NewSoft, Inc. All other product names are trademarks of their respective companies. All rights reserved.

Coming Soon: Windows for Webnuts



What's the next version of Windows 95 going to be called? I'm voting for "Windows for Webnuts." The big deal in the upgrade is supposed to be a Web browser interface that will make using Windows just like browsing the World Wide You-Know-What.

At first blush, this does sound like a noble, selfless, and maybe even smart idea. Coming almost literally out of nowhere a couple of years ago, the generic Web browser is well on its way to becoming the interface of choice, in part because it's exceptionally easy to figure out, in part because a lot of people already know how to use it. But is it a panacea? Unlikely.

Consider the Microsoft Network, whose interface was largely designed to work just like Windows 95. It must have sounded like a good idea at the time, but when resources are at the far end of a slow wire, things work differently from when they're sitting on your hard drive. When you click on a file that's in your system, for instance, it generally opens right away. When you click on a file that has to travel through a modem one bit at a time, the delay can drive you nuts, especially if the system doesn't let you know what's happening. Until its recent upgrade, for example, MSN had icons you clicked on that slowly downloaded a file and then opened it with Word or Notepad. While this went on (with no hint about what was happening), you mostly got to wonder why your machine was slowing down. Maddening.

I'm all for consistency in user interfaces. I rant about it. I go ape when I don't get it. And Microsoft is notorious for failing to achieve it. Example: By the time of the release of Windows 95, virtually every program had its search function under the Edit menu. So what do you get with Windows 95? A Notepad that still has its search engine under a separate Search menu.

And I go bonkers over game interfaces, each loonier than the next, and internally inconsistent to boot. A particular circle in virtual hell is reserved for designers who do adventures where you have to move through virtual landscapes and hunt for virtual clues. Click the left edge of the screen, and you'll probably turn your viewpoint 90 degrees to the left. Except when it's 180 degrees, or 45. Or the times when you don't turn at all.

Action games are not much better. Battle Beast from Seventh Level comes with a quick reference card so infernally complicated that in the time it took you to master all the commands you could probably do something useful, like becoming fluent in Chinese. Confronted with this sort of insanity, you yearn for an interface as consistent and easy to master as a Web browser's. But there are some things that just won't fit into a browser interface no matter how hard you try. I suspect kick-boxing is one of them.

A Foolish Consistency

Besides, as Ralph Waldo Emerson pointed out, a foolish consistency is the hobgoblin of little minds, and the big-minded browser designers haven't made their software all that consistent once you get beyond the basics. One thing I particularly like about Microsoft's Internet Explorer, as opposed to Netscape Navigator, is the way it retains a reasonably complete history of where you've been even after you disconnect from your Net access provider. Better still, you can load that history as a Web page and, if the information's still in the cache, retrieve it without going back online. Unfortunately, I can't always get the feature to work, and if there are any official rules about when it's supposed to, I have yet to discover them.

Still, the browser interface does increasingly begin to look universal, particularly since it's a cross-platform technology. The stuff you see on your Windows machine can look pretty much the same on a Mac or UNIX box. And given all the extensions that have turned up recently, the browser model keeps on surprising us with its abilities. If somebody could just manage to organize hot-linked icons, maybe it wouldn't make such a bad front end for kick-boxing after all. We should soon see whether Microsoft can make its browser a reasonable front end for such tasks as managing files, though putting the word *soon* in a sentence about Microsoft is always a dangerous thing to do.

Now, if only the Web browser version of Notepad would put its search functions on the same menus as the Internet Explorer's...

I'm all for consistency in user interfaces. I rant about it. I go ape when I don't get it. And Microsoft is notorious for failing to achieve it.

PC World *contributing editor Stephen Manes is a columnist for the* New York Times *and coauthor of* Gates: How Microsoft's Mogul Reinvented an Industry *(Touchstone/Simon & Schuster, 1994, 800/223-2348).*

By Stephen Manes

OTHER PCs CAN RUN
BUT PC MAGAZINE SAYS DELL

200MHz PENTIUM® PRO PROCESSOR
DELL DIMENSION™ XPS Pro200n

- Mini Tower Model
- 32MB EDO Memory
- 256KB Internal L2 Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS® Office Professional with Bookshelf for Windows® 95 (N.F.I.)
- Microsoft® Windows NT™/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty†

★ *Upgrade to 1 Year of Windows NT support for only $149 more.*

★ *Upgrade to 64MB EDO memory for only $899 more.*

$3599

Business Lease◊: $130/Mo.
Order Code #500257

150MHz PENTIUM PRO PROCESSOR
DELL DIMENSION XPS Pro150n

- Mini Tower Model
- 16MB EDO Memory
- 256KB Internal L2 Cache
- 2.5GB Hard Drive [10.5ms]
- 15TX Trinitron Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

★ *Upgrade to 32MB of EDO memory for only $399 more.*

★ *Upgrade to a 17LS monitor (15.7" v.i.s.) for only $240 more.*

$2649

Business Lease: $98/Mo.
Order Code #500256

166MHz PENTIUM PROCESSOR
NEW DELL DIMENSION XPS P166s

- Mini Tower Model
- 16MB SDRAM Memory
- 512KB Pipeline Burst Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- AWE32 Wave Table Upgrade Card
- Altec Lansing ACS-31 Speakers
- 1.6GB/3.2GB Travan Tape Backup
- 28.8 Data/Fax Modem
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

$3479

Business Lease: $129/Mo.
Order Code #500255

166MHz PENTIUM PROCESSOR
NEW DELL DIMENSION XPS P166

- Mini Tower Model
- 16MB SDRAM Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Integrated Sound Blaster 16 Sound
- Altec Lansing ACS-5 Speakers
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

Pictured System

$2549

Business Lease: $94/Mo.
Order Code #500254

133MHz PENTIUM PROCESSOR
DELL DIMENSION XPS P133c

- Mini Tower Model
- 16MB EDO Memory
- 512KB Pipeline Burst Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 6X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- AWE32 Wave Table Sound Card
- Altec Lansing ACS-31 Speakers
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

$2899

Business Lease: $107/Mo.
Order Code #500253

PC MAGAZINE EDITORS' CHOICE

133MHz PENTIUM PROCESSOR
DELL DIMENSION XPS P133c

- Mini Tower Model
- 16MB EDO Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 6X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

★ *Upgrade to 32MB of EDO memory for only $399 more.*

$2199

Business Lease: $81/Mo.
Order Code #500252

PC MAGAZINE EDITORS' CHOICE

100MHz PENTIUM PROCESSOR
DELL DIMENSION P100t

- Mini Tower Model
- 16MB EDO Memory
- 1.6GB Hard Drive [10ms]
- 15TX Trinitron Monitor (13.7" v.i.s.)
- 64-bit PCI 2MB DRAM Video
- 4X Multi-session EIDE CD-ROM Drive
- Microsoft Windows 95/30 Days Free Support/Dell Mouse
- 3 Year Limited Warranty

★ *Add Altec Lansing ACS-31 Speakers and a AWE32 Wave Table Sound Card for only $219 more.*

★ *Upgrade to 24MB of EDO memory for only $199 more.*

$1799

Business Lease: $67/Mo.
Order Code #500251

PC MAGAZINE EDITORS' CHOICE

100MHz PENTIUM PROCESSOR
DELL DIMENSION P100t

- Mini Tower Model
- 8MB EDO Memory
- 850MB Hard Drive [12ms]
- 14XE Monitor (13.19" v.i.s.)
- 64-bit PCI 1MB DRAM Video
- 4X Multi-session EIDE CD-ROM Drive
- Microsoft Windows 95/30 Days Free Support/Dell Mouse
- 3 Year Limited Warranty

★ *Upgrade to 16MB of EDO Memory for only $139 more.*

★ *Upgrade to a 1.6GB hard drive for only $100 more.*

★ *Add a 3Com EtherLink III Combo Card with Parallel Tasking for only $99 more*

$1449

Business Lease: $54/Mo.
Order Code #500250

PC MAGAZINE EDITORS' CHOICE

NEW STANDARD 3 YEAR LIMITED WARRANTY WITH ALL DELL DIMENSION SYSTEMS.

‡Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., 2214 W. Braker Lane, Suite D, Austin, TX 78758. ◊Business leasing arranged by Leasing Group, Inc. ★Prices and specifications valid in the U.S. only and subject to change without notice. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. MS, Microsoft, Windows and the Windows logo are registered trademarks and Windows NT is a trademark of Microsoft Corporation. XJACK is a registered trademark of US Robotics Mobile Communications Corporation.
©1996 Dell Computer Corporation. All rights reserved.

intel inside pentium PROCESSOR

Designed for Microsoft® Windows®95

WINDOWS 95. DOES IT BEST.

December 5, 1995
Dell Dimension P100t

December 5, 1995
Dell Dimension XPS P133c

133MHz PENTIUM PROCESSOR
NEW DELL LATITUDE XPi P133ST

- 11.3" SVGA Active Matrix Color Display
- 16MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 810MB Hard Drive (1.2GB Max)
- PCI Bus Architecture
- Smart Lithium Ion Battery
- 128-bit PCI Graphics Accelerator, 1MB Equivalent Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- IrDA-1 Port
- Integrated 16-bit Audio
- Built-in Speaker, Stereo and Mic Jacks
- Extendable 1 Year Warranty†

★ *Add an external Dell 4X CD-ROM for only $359 more.*

$4399‡

Business Lease: $158/Mo.
Order Code #800048

120MHz PENTIUM PROCESSOR
DELL LATITUDE XPi P120D

- 10.4" Dual Scan Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Hard Drive (1.2GB Max)
- Smart Lithium Ion Battery
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
- Optional Dell Latitude DeskDock™ Station Available
- Extendable 1 Year Warranty

★ *Upgrade to an 810MB hard drive for only $200 more.*

$2399‡

Business Lease: $89/Mo.
Order Code #800036

133MHz PENTIUM PROCESSOR
NEW DELL LATITUDE XPi P133ST

- 11.3" SVGA Active Matrix Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Hard Drive (1.2GB Max)
- PCI Bus Architecture
- Smart Lithium Ion Battery
- 128-bit PCI Graphics Accelerator, 1MB Equivalent Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- IrDA-1 Port
- Integrated 16-bit Audio
- Built-in Speaker, Stereo and Mic Jacks
- Extendable 1 Year Warranty

★ *Add a 28.8 XJACK™/Cabled modem for only $259 more.*

$3899‡

Business Lease: $140/Mo.
Order Code #800047

75MHz PENTIUM PROCESSOR
DELL LATITUDE XPi P75D

- 10.4" Dual Scan Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Hard Drive (1.2GB Max)
- Smart Lithium Ion Battery
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
- Optional Dell Latitude DeskDock Station Available
- Extendable 1 Year Warranty

★ *Double your RAM to 16MB for only $299 more.*

$1999‡

Business Lease: $74/Mo.
Order Code #800044

If you're impressed by Windows 95, you should see it running on the Dell Dimension XPS P133c and the Dell Dimension P100t. These Dell® systems were just judged the best for running Windows 95 by *PC Magazine*.

The experts reviewed 83 different desktops – both high-end (120 and 133MHz) and mid-range (90 and 100MHz) – and the Dell systems swept both categories. In fact, they praised the Dell desktops, calling them "shining examples of what this award is all about."

The way these systems run Windows 95 is impressive. But the way these systems are priced is even more so.

To order, give us a call today.

DIRECT NEWS ON THE INTERNET
For free updates on Dell's product offerings, pricing and other news electronically, send an email message to "DirectNews-request@dell.com." Please use the word "subscribe" as the body of your message.

DELL®

TO ORDER, CALL

800-688-0941

In Canada,* call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/

Keycode #03137

INTERNET PHONES

Nice Idea...But No Match for Ma Bell

Murky sound and tricky installation relegate 'free' Internet long distance to novelty status.

TEST DRIVE ▶ You've probably seen the tempting claims by now. "Talk for free over the Internet," promises one software package. "Use your PC just like a phone," says another.

Making phone calls via the Internet is indeed a great notion. Using a PC equipped with a sound card, microphone, and special software, you can make a local call to your Internet service provider—and then converse with people all over the world.

But it'll be a few years before Candice Bergen abandons Sprint to hawk Internet telephone service. In a test of four Net phone software packages—Quarterdeck's WebTalk, VocalTec's Internet Phone, Third Planet Publishing's Digiphone, and freeware from FreeTel Communications—we found that "free" long distance can't compare to traditional phone calls. The products were hard to install and required major hardware resources. And establishing connections over the Net was iffy at best.

Even when calls went through, the quality ranged from awful to barely acceptable. In more than a dozen conversations with people over the Net, only one call sounded close to normal. Worse, we could establish voice communications only once between our testing sites in New Hampshire and California. And when we talked, using Internet Phone, it sounded like Neil Armstrong calling Houston from the moon.

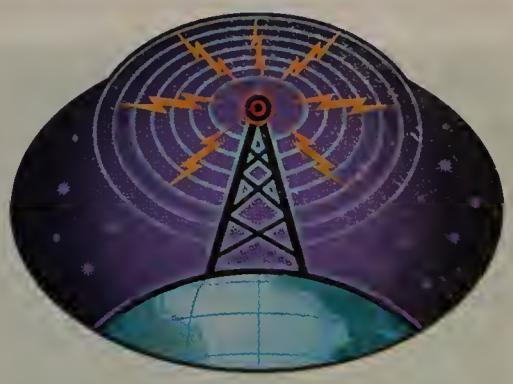
Edited by Andy Reinhardt and Randy Ross

To be fair, the limitations of Internet phones aren't entirely the fault of these products. A lot of variables come into play, ranging from the PC you're using to the speed of your Internet connection to the amount of traffic clogging the Net.

Nevertheless, the mere possibility of a low-cost alternative to conventional phone service has provoked anxiety among phone companies, which worry they could lose business to the unregulated Internet. A coalition of small service providers, America's Carriers Telecommunication Association, has petitioned the Federal Communications Commission to review Internet phone products. Internet telephony may be immature today, but as it gets better and more widespread it could utterly upset the world order in telecommunications.

Down the Wires

To grasp the limits of Internet phones, consider what's involved in making a call across cyberspace. First, you need a sound card to digitize your voice. Until this year, all such cards were *half-duplex*, which meant that only one person could talk at a time, as with old CB radios. *Full-duplex* cards, which let you carry on a normal two-way conversation, are now available, and all



Breaking News

BROWSER ANTE: In the Web browser war, Microsoft has one big advantage: Its Internet Explorer is free, while Netscape's Navigator costs $49. Of course, Navigator supports plug-ins, frames, and Java, whereas Explorer doesn't. But Microsoft's Internet Explorer 3, slated to ship early this summer, will change all that. It supports everything Navigator does, and has other attractive features: parental controls (adhering to new standards from the Recreational Software Advisory Council), a mail client, a newsreader, whiteboarding and conferencing tools, TrueType fonts, and, most important, support for ActiveX objects, Microsoft's answer to Java. Internet Explorer 3 will begin as a free download. But the next incarnation—expected two months later—will merge the functions of the Windows 95 Explorer and Internet Explorer, creating a unified interface for local and online file browsing and management. This commercial release may ship as a Win 95 add-on, like the Plus pack, putting it back on equal footing—at least in price—with Navigator. —Y. L.

10X CD-ROM DRIVES: Pinnacle Micro and Pioneer have just set a new speed standard for CD-ROM drives. Their new 10X drives will offer a 1500-kilobytes-per-second data transfer rate—2.5 times faster than popular quad-speed CD-ROM drives. The faster data

(continued on page 49)

LEFT: GORDON STUDER; ABOVE: JEFFREY PELO

the packages we tested take advantage of them. If you have a Creative Labs Sound Blaster 16 or AWE-32 card (the actual card, not just compatibles), you can download software drivers to make it full duplex.

Because even a 28.8-kbps Internet connection has only about a third of the bandwidth necessary to carry digitized voice, Internet phone packages use a software *codec* (coder/decoder) to compress and decompress the data stream. Although makers of Internet phone software claim their products work fine on 486 systems, our experience shows Pentium PCs are the baseline for reasonable performance.

Another potential roadblock is the thorny problem of the Internet protocol address. This multidigit number is your address on the Internet—and performs double duty as your Net phone number. However, some Internet service providers give you a different IP address every time you connect. Since there's no way for a calling party to know this address at any given time, they can't call you directly. WebTalk, Internet Phone, and FreeTel get around this problem by letting you meet other people for conversations via Internet Relay Chat servers scattered around the world.

INTERNET PHONES consist of software, but WebTalk and Jabra-Net include snazzy mikes.

Even if you've got all the other steps figured out, remember that you can talk only to someone who's using the same software. Microsoft and more than 100 developers are at work on a set of standards for voice and video communications over the Internet, but until it's adopted, Net phone products will be incompatible with each other.

And don't forget this gotcha: Both you and the other party have to be online and near your PCs to call each other. That means you have to arrange calls in advance via e-mail—or worse yet, use a regular phone to ring up the other person first and tell them to fire up their Net phone software.

NET PHONE SUPPORT will be built into upcoming apps, says Jeff Pulver, chair of the Voice on the Net Coalition.

Viable Contenders

Of the four products we examined, the best was Quarterdeck's $50 WebTalk. It was the most useful—and the only one that lets you set up calls through an IRC server or from one IP address to another. Quarterdeck says it plans to implement whiteboard sharing and conferencing capabilities in future releases of the package.

Better known than WebTalk is VocalTec's $69 Internet Phone. It has the simplest interface of the lot, with buttons that can be preset for speed dialing. But Internet Phone does not allow direct user-to-user calls: You have to connect to an IRC server. We had difficulty making quality connections using Internet Phone; the only way we could communicate was to speak slowly and distinctly—not exactly the natural way.

We tried a late beta version of Third Planet Publishing's $89 Digiphone, which was easy to install. However, Digiphone's compression technology slowed things down so much that we experienced annoying 2- to 4-second pauses in transmission. Unlike the other Internet phone vendors, Third Planet doesn't support IRC servers, which means you must connect directly to an IP address. You're out of luck otherwise.

As the name implies, FreeTel Communications' FreeTel software is free. The catch? FreeTel makes its money by selling advertising, so when you dial into the company's central server (you can't call other users directly), a windowpane displays ads that change regularly. It's a bit distracting initially, but you get used to it.

FreeTel was easy to install and has some nice features, such as a chat window that lets you exchange text messages. It also includes full-duplex drivers for Sound Blaster cards. However, the audio quality was unacceptable. All conversations experienced delays and dropouts, making a true conversation virtually impossible. The version we tested was a beta, however, so check out the final release, slated to be available by the time you read this.

If you're looking for a microphone, Jabra makes a nifty earpiece-and-mike combo called the JabraPC, which is part of WebTalk packages. Jabra also sells its own Jabra-Net bundle, including the JabraPC, a copy of VocalTec's Internet Phone, and the Algo Communications PC phone dialer.

On the Net

Despite the crudeness of voice over the Net, the products we tested and others like them represent a huge threat to the phone companies. You might shed crocodile tears for these corporate giants, but an explosion of free Internet long-distance calling could affect you too, raising the cost

of your local phone rates—even when you're calling a friend across town.

This argument is made by America's Carriers Telecommunication Association, a group composed of small carriers whose annual gross revenues are between $10 million and $100 million. ACTA attorney Charles Helein asserts that by offering free long-distance calls, the vendors of Internet phone software are putting themselves into the telecommunications business, which means they should be similarly regulated.

LIMITED LINKS: Digiphone allows only direct user-to-user connections, a problem if you lack a fixed IP address.

ACTA argues that free calls disrupt the economics of telecommunications and could undermine one of the long-standing principles of telecom law: the guarantee of "universal access" at reasonable rates for dwellers of rural and low-income areas. Inexpensive local calls are possible because high-volume users defray service costs for others. If Net phones draw away lucrative long-distance users, there'll be less money in the pot to subsidize everybody else. "Those who defend the ability to give free long-distance service are elitist," Helein says.

Internet telephony promoters respond that ACTA is overreacting. Jeff Pulver, chair of the grassroots Voice on the Net Coalition, estimates there are now only 25,000 active Net phone users worldwide. In the interest of technological development, he says, ACTA's petition to the FCC should be denied. A growing number of intriguing applications are on the horizon, he notes. For instance, game software makers are building Internet phone support into future titles. This might have to stop if ACTA's petition goes through.

The FCC, meanwhile, extended its call for comments on ACTA's petition to June 8. At press time, FCC director of technology Mark Corbitt couldn't say where the commission will stand with regard to internet phones. The global reach of the Internet raises vexing issues for international telephone regulators as well.

In their current incarnations, none of the products we tested constitute viable tools for either personal or business use. But make no mistake about it: Major players are taking the potential for Net phones very seriously. The next version of Netscape Navigator, for example, will include CoolTalk, an audio and data collaboration tool from Insoft. Standard-setting products such as these could soon make Internet phones as ubiquitous as Web browsers. And if that happens, you can bet the big telephone companies won't let Net phone makers off the hook.

—Stan Miastkowski and Gabrielle Mitchell

Digiphone

Third Planet Publishing, 214/713-2607
List price: $89
http://www.planeteers.com
Reader service no. 808

FreeTel

FreeTel Communications, 408/356-0490
Pricing: Free
http://www.freetel.com

Internet Phone

VocalTec, 201/768-9400
List price: $69
http://www.vocaltec.com
Reader service no.809

Jabra-Net

Jabra Corp., 800/327-2230, 619/622-0764
Street price: $119
http://www.jabra.com
Reader service no. 810

WebTalk

Quarterdeck, 800/354-3222
List price: $50
http://www.qdeck.com/qdeck/products/webtalk/
Reader service no. 811

JEFFREY PELO

Breaking News

(continued from page 47)

transfer will save you time loading and accessing large files and playing video clips. Pinnacle's 10Xtreme Enhanced IDE CD-ROM drive, a $299 internal unit, fits in a 5.25-inch bay. Pioneer's Super 10X should appear in high-end multimedia PCs this fall and will be sold separately later. It will support either EIDE or SCSI-2. —L. M.

NEW RAM TYPES: AST's new Bravo LC line of PCs is among the first to use the new Unified Memory Architecture. This design lets the graphics subsystem harness the PC's main memory instead of dedicated graphics RAM, thus reducing cost. A 100-MHz Pentium-powered Bravo LC without monitor costs just $1220. AST's Bravo MS line takes the opposite approach, using new synchronous graphics RAM in its graphics subsystem. SGRAM is about 25 percent faster than EDO RAM and cheaper than high-speed VRAM, says AST product specialist Brent Mosbrook. A P-166 MS system without monitor costs $2415. —G. M.

TIDBYTES: Consumer Alert: Nu-kote Holdings' replacement cartridges for Epson Stylus 800 printers are potentially damaging to the printers, according to a recent court ruling that blocks Nu-kote from selling its $17.95 model RF61 cartridges...Low-Price Color Laser: Xerox's XPrint 4915 Plus will sell for a street price of $4500,

(continued on page 51)

Anniversary PC Owners Fight Gateway—And Win

In October 1995 Stan Hoff, a radiologist from New York, bought a 133-MHz Pentium PC from Gateway 2000. Though Gateway promoted the $4000 system as a special 10th anniversary model, Hoff found no reason to celebrate. The Altec-Lansing Surround Sound speakers hissed loudly. The video card did not live up to its advertised claims. Whenever Hoff tried to play an audio disc in the CD-ROM drive, the PC froze up for short periods. And the system didn't come in the special tower case touted in Gateway's ads.

Hoff entered into a six-month battle with Gateway, during which the company alternately cooperated and stonewalled. He also discovered he wasn't alone: Hundreds of other 10th anniversary system owners were barraging Gateway with complaints and trading tales of woe online.

Gateway has now addressed all these problems, but Hoff alone spent more than $300 on phone calls and online charges to get satisfaction. Along the way, he and other customers learned about industry practices that are by no means unique to Gateway. Principal among them: Swapping of parts means that the PC you get may not have exactly the same components you read about in a review. And ads may imply that parts are better than they are.

The Parts Shuffle

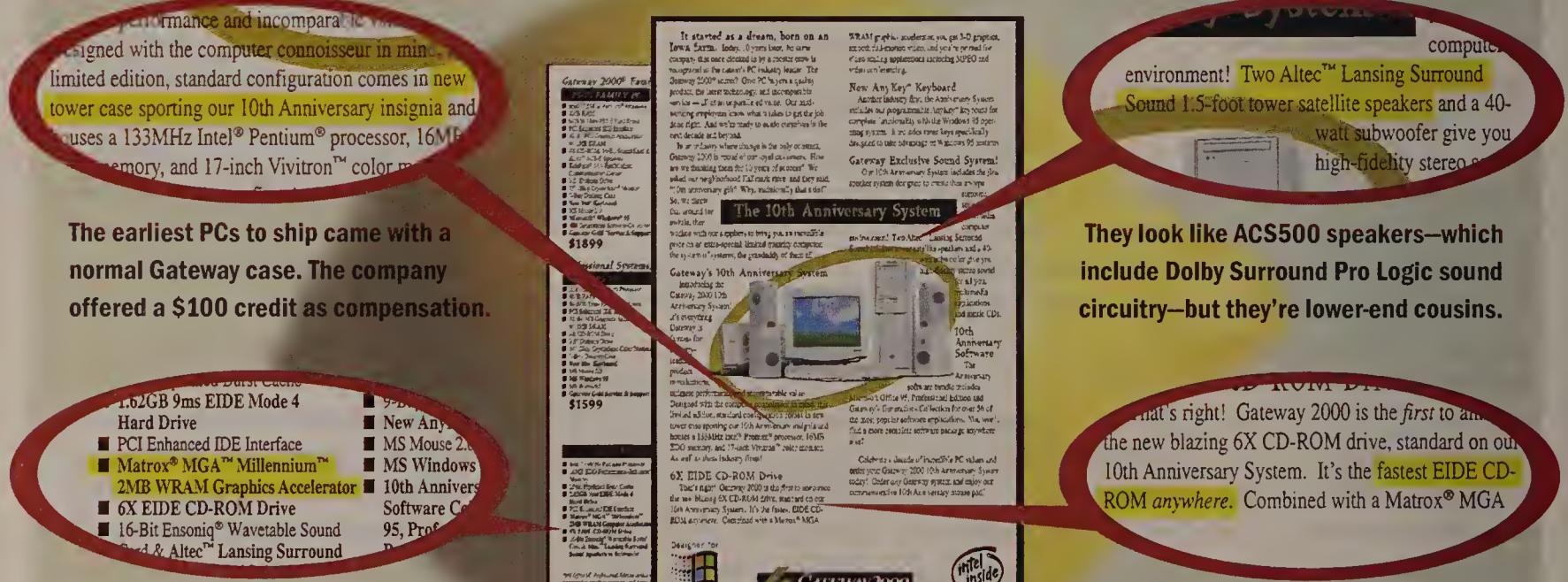
"None of the major PC companies has the wherewithal to manufacture every piece that goes in their box," observes Tim Bajarin, president of research firm Creative Strategies. "PC companies are repackagers of components." Price competition in the PC industry encourages vendors to switch parts based on the best available deals.

Gateway cites this logic in its own defense. "This has been standard industry practice for years," says David Prais, marketing communications manager. But in the case of the 10th anniversary PC, three of the components were subpar. To curtail costs, Gateway used stripped-down versions of some name-brand parts, and in one case promoted them as the real thing.

Case in point: The Matrox MGA Millennium graphics card described in Gateway's ads (which appeared in *PC World* and elsewhere) was actually different from the board sold in stores. Unlike the retail version, Gateway's card couldn't be upgraded with hardware to speed MPEG video, and it used a slower RAMDAC chip, which hurt performance at the high resolutions supported by 20- and 21-inch monitors.

Matrox built the card to Gateway's specifications and omitted these advanced features. "Gateway wanted to save some costs," says Matrox spokesperson Caroline

THE AD SET HIGH EXPECTATIONS



The earliest PCs to ship came with a normal Gateway case. The company offered a $100 credit as compensation.

They look like ACS500 speakers—which include Dolby Surround Pro Logic sound circuitry—but they're lower-end cousins.

Not the full retail version of the board; it lacked a hardware MPEG upgrade option and used a slower RAMDAC chip.

Faster drives were available at the time—and the one Gateway shipped performed like a 4X drive with a case of hiccups.

The Mad-as-Hell Club

AGGRIEVED OWNERS Jim Signorile (left) and Stan Hoff met after months online swapping stories about their PCs.

The Gateway 2000 10th Anniversary Club formed on an upbeat note last October in Gateway's forum on CompuServe. Participants were united by pride of ownership: "People wanted to share information and keep up with the latest developments," says club president Stan Hoff.

But soon members began posting messages about shipping delays, hissing speakers, and nondelivery of the special tower case promised in the ads. Gateway offered a $100 credit or a free Microsoft keyboard to compensate for the missing case. But when the special case became available, the company withdrew its offer.

For the speakers, Gateway promised a full refund for returned units or a pair of smaller speakers plus a $50 credit.

In the meantime, the online group had emerged as a clearinghouse for discussing technical snafus and strategies for dealing with Gateway. It quickly grew to more than 250 angry members who demanded resolution of their complaints.

After Gateway addressed the last of the club's concerns—the Matrox graphics board—in April, Hoff felt a different kind of pride. The company's response, he says, "is an indication that by organizing online, consumers can pressure companies to come clean."

DeBic. The board is still used in some Gateway PCs, but the company no longer touts it as an MGA Millennium; now it's called a Matrox 2MB WRAM video card.

Some audio-conscious buyers mistook the speakers for ACS500 models, which include Dolby Pro Logic, but they were actually identical-looking, Dolby-less ACS-450 units made for Gateway—and not sold in stores. Gateway no longer offers ACS450 speakers; instead it sells ACS400s, which are smaller but have true Dolby.

The component that caused Hoff and many others the most grief was the 6X CD-ROM drive sold to Gateway by Wearnes. The Philips-built drive performed like a 4X unit and caused maddening freeze-ups when playing audio CDs or CD-ROM–based games.

Gateway rushed the drive to market for competitive reasons. "We now recognize the Wearnes drive is one of the slowest [in its class]," says Gateway product marketing manager Tony Grasso. "But when we rolled it out, it was one of the only 6X drives." (Actually, a faster Teac drive was available, but Gateway didn't use it.)

Resolution

Gateway says it shipped 10,000 of the 10th anniversary systems and has solved all the problems of unhappy customers. The company will refund $250 for returned Matrox cards and issue a $200 credit for ACS450 speakers. And it will exchange the Wearnes CD-ROM drive for a true 6X drive from Sanyo. Gateway admits no wrongdoing, but "obviously we were a little slow to respond," says marketing manager Prais. "We are trying to rectify all these issues."

Hoff says he's happy at last: "I can finally enjoy my darned machine already."

—Jeff Sengstack

Breaking News

(continued from page 49)

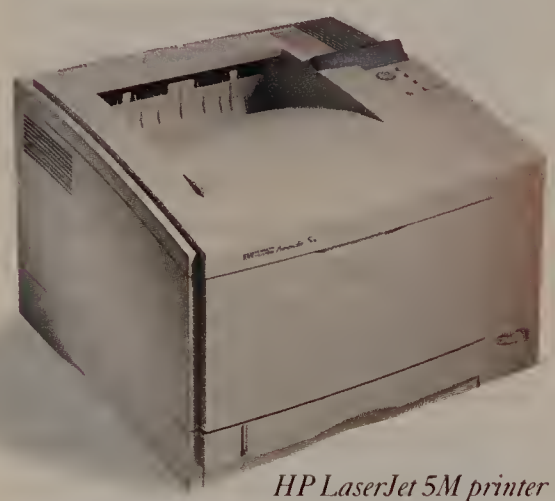
considerably less than HP's $5995 Color LaserJet 5. The Xerox printer includes PostScript and 16MB of RAM and prints at 3 pages per minute for full-color pages, 12 ppm for monochrome...SoftRAM Refund: Owners of SoftRAM and SoftRAM95 from Syncronys Software may be due for a refund, coupons, and more under a class action agreement in Illinois. For more information, contact the vendor at 800/335-4059...Free Groupware: Novell is giving away more than $8000 worth of groupware to NetWare users who convert from Microsoft Mail to GroupWise. The freebies include up to 50 GroupWise 4.1 client licenses, plus networking software. The promotion is scheduled to last through May.

PENTIUM RIVAL: AMD's 5K86 chip may be coming soon to an entry-level PC near you. Available in 75- and 90-MHz versions, 5K86 CPUs will sell for 30 percent and 50 percent less, respectively, than their Pentium counterparts. We evaluated a prototype PC based on an AMD 5K86-P75, and it posted speeds almost as fast as we've measured on a 90-MHz Pentium system. AMD's price/performance advantage is likely to be short-lived, though—Pentium prices are expected to fall in May. —S. S.

ABOVE, LEFT: BRIAN SMALE; ABOVE, RIGHT: JEFFREY PELO

HP Workgroup Lasers Hit New Low Price

TEST DRIVE ▶ Hewlett-Packard's new LaserJet 5 printers are the fastest in their class for graphics printing and boast street prices starting under $1300. (Lexmark's 16-ppm Optra R+ and Rt+ print text faster and sell for $1400 and $1649, respectively.) If you need a network printer for a small workgroup and price is a prime consideration, the new HPs are worth a look.



HP LaserJet 5M printer

These 12-ppm, 600-dpi printers include 4MB of RAM and use the same print engine as the models they replace, the LaserJet 4 line. The LaserJet 5 printers run slightly faster, particularly on graphics, thanks to a new 33-MHz Intel i960 RISC processor and PCL 6, the latest iteration of HP's printer language. PCL 6 isn't reason enough to buy the printer, but it manages memory better, prints complex graphics faster, and returns you to your application a bit faster than its predecessor, PCL 5e.

The $1549 LaserJet 5N includes a JetDirect card for ethernet LANs. If you need PostScript support, the $1799 LaserJet 5M provides Adobe PostScript level 2, 2MB more RAM, and a JetDirect card for ethernet and LocalTalk networks.

Under Windows 3.1 and Win 95, the LaserJet 5M produced better graphics quality than a LaserJet 4. That's due to new support for 256 shades of gray. The 5M's text print quality was also excellent. The LaserJet 5 models come with a 250-sheet paper tray and a 100-sheet multifunction tray. Options include a duplex unit, a 75-envelope feeder, and a 500-sheet tray.

One gripe: When I opened the printer during setup, a roller part was lying loose inside. We've found roller parts loose in other HP printers recently. This part needs to be secured better so that people don't waste setup time wondering where it belongs or calling tech support to find out.

—Laurianne McLaughlin

HP LaserJet 5, 5N, and 5M

Hewlett-Packard, 800/752-0900
Street price: Starts at $1299
Reader service no. 782

Cyrix PCs Rival Pentiums

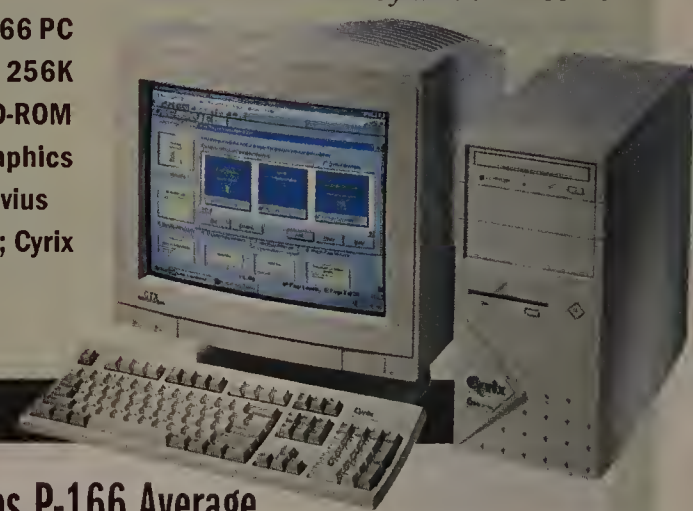
TEST DRIVE ▶ **Seeking a premium image for its Pentium-class processors, Cyrix is now hawking PCs bearing its own name. The first models feature Cyrix 6x86-P133+, P150+, and P166+ CPUs and cost $2399 to $5199. The built-to-order computers will be sold via mail order.**

The names Cyrix uses for its chips are confusing: The 6x86-P133+ is actually a 110-MHz part that yields performance akin to a 133-MHz Pentium's. We tested Cyrix's top-of-the-line PC, based on a 133-MHz 6x86-P166+ CPU, and it bested our average score for Pentium-166 systems.

It was not the fastest PC we've tested; that honor goes to a Micro Express unit built on the same 6x86-P166+ chip. And the Cyrix PC we tested costs $4639—far more than Pentium-166s we've seen—due to its 4.2GB Ultra-SCSI hard drive and fancy graphics card. Other models sell for less: A more typical 6x86-P166 PC costs $3349 with 16MB of RAM, a 256K cache, 2.1GB EIDE hard drive, 6X CD-ROM drive, Matrox MGA Millennium graphics card, and 17-inch display. —Susan Silvius

• Cyrix 6x86 PCs $2399 to $5199; Cyrix Systems Direct; 800/340-7501
Reader service no. 783

Cyrix 6x86-P166 PC



TEST REPORT

Cyrix 133-MHz 6x86 System Tops P-166 Average

▼ PC WorldBench score		CPU	RAM (MB)
199	Cyrix 6x86-P166	6x86-P166+	16
211	Micro Express MicroFlex	6x86-P166+	32
194	Average of 17 P-166 PCs	Pentium-166	16

◀ FASTER — Test times — SLOWER ▶

All systems had 256K of secondary cache. Time in minutes 0 10 20 30 40

Word 7.0 · Excel 7.0 · Picture Publisher 6.0 · Paradox 5.0 for Windows · WordPerfect 6.1 for Windows · 1-2-3 release 5 for Windows

Methodology Higher PC WorldBench scores are better. For a description of the PC WorldBench 1.0 tests, see the Test Report in this month's system review.

Data based on PC WorldBench testing conducted by the PC World Test Center. All rights reserved.

QUARTERDECK

CleanSweep® 95 is the first 32-bit uninstaller.

We also believe it's the only uninstaller worth looking at, period. But you don't have to take our word for it.

"Because [the competition] has a weaker Windows cleanup module, I continue to recommend CleanSweep 95..."
INFOWORLD, JAN 22, '96

"...CleanSweep 95 is an essential purchase for anyone...with Windows 95."
PC MAGAZINE, JAN 9, '96

"Quarterdeck's CleanSweep gets the User's Choice Award for uninstaller software."
JERRY POURNELLE, BYTE, APR '96

"CleanSweep 95's user interface is still the simplest and most intuitive of all the commercial uninstallers PC Week Labs has seen."
JIM RAPOZA, PC WEEK, NOV 6, '95

"The leader in unit sales for Windows 95 and Windows NT."*
PC DATA

EXCLUSIVE!
Supports Windows 95, Windows NT and Windows 3.1

Designed for Microsoft® Windows® 95

★★★★ Multimedia World 1/96

WINDOWS 1996 WIN 100

1995 BYTE POURNELLE'S USER'S CHOICE AWARD

Call (800) 683-6696 for more information.

Ask for code 01105. E-mail: info@quarterdeck.com World Wide Web: http://www.quarterdeck.com/

Circle 225 on reader service card

©1996 Quarterdeck Corporation. All rights reserved 13160 Mindanao Way, Marina del Rey, CA 90292 Quarterdeck and CleanSweep are registered trademarks
The Quarterdeck "Q" symbol is a trademark of Quarterdeck Corporation. All other trademarks or tradenames are the properties of their respective holders

*Source: PC Data 10/95–12/95

Corel Pumps Up WordPerfect Suite for Win 95

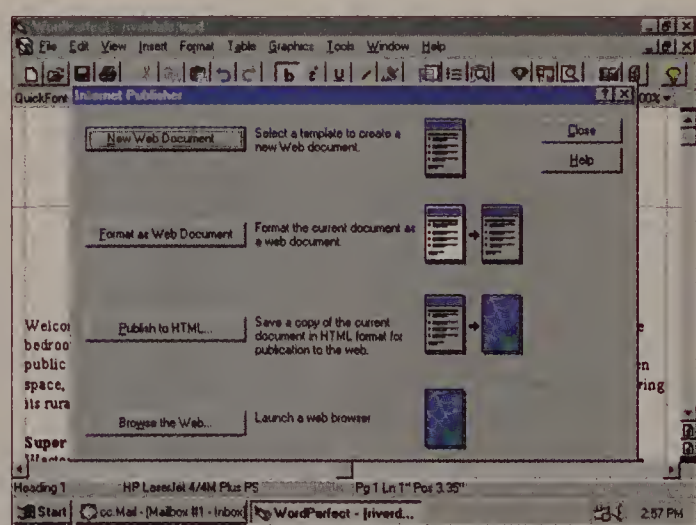
Only a few months after acquiring WordPerfect and the rest of Novell's desktop software products, Corel has put its mark on the application suite market. The packages formerly known as PerfectOffice Standard and Professional have been revamped, reconfigured, and—in true Corel fashion—beefed up with a slew of additional software. Corel will be hard-pressed to win over existing Microsoft Office 95 or Lotus SmartSuite 96 users. But for those who haven't yet made the leap to a Windows 95 suite, Corel's offerings are tempting. While undercutting both Microsoft and Lotus on price and bundling more applications than they do, Corel has also made the most headway in adding Internet support to its applications.

In March Corel unveiled two new software lineups: Corel WordPerfect Suite and Corel Office Professional. The 16-bit versions of both suites began shipping in April; Win 95 versions are expected early this summer. The core apps haven't changed since Corel took over, but the packaging has. WordPerfect is no longer sold separately; it heads up WordPerfect Suite, which costs the same as a stand-alone word processor and includes Quattro Pro, Envoy, Presentations, CorelFlow, Corel Screen Saver, Starfish Software's Internet Sidekick and Internet Dashboard, Netscape Navigator, hundreds of fonts, and thousands of clip art images. Corel Office Professional includes all the above, plus the InfoCentral personal information manager, Borland's Paradox, and a client for Novell's GroupWise groupware.

Different Application Bundles

We examined a prerelease version of the Windows 95 WordPerfect Suite and noted improvements since our first peek in March (see "PerfectOffice for Win 95 Moves Ahead"). Corel has stripped away most of the Desktop Applications Director, a customizable toolbar for organizing and launching applications, replacing it with Internet Dashboard. InfoCentral is replaced with Internet Sidekick in WordPerfect Suite. (In fact, InfoCentral no longer ships by itself; instead it is available only in Corel Office Professional.)

When we previewed the PerfectOffice 7 beta, Novell had not yet implemented the Internet features. Now we've tried them out, and our verdict is that Corel's suites include better Internet features than Office or SmartSuite. You can launch your browser from within WordPerfect, Quattro Pro, and Presentations, and you can link directly to a Web site by embedding a URL in a document. With WordPerfect's Internet Publisher add-in, you can see how a document will look when it's posted to the Web and convert documents to Web-ready pages, complete with HTML codes.



WORDPERFECT'S INTERNET PUBLISHER lets you create and preview Web pages, then publish them in HTML.

Internet Sidekick and Internet Dashboard weren't available in the software we previewed. Internet Sidekick will let you set appointments remotely and schedule meetings with other Sidekick users over the Web; you can also check calendars using any Java-capable Web browser—without using Sidekick. Internet Dashboard makes it easier to organize frequently visited Web sites by helping you manage bookmarks in Netscape Navigator and Favorites in Microsoft Internet Explorer.

Performance Counts

Though this beta version of Corel WordPerfect Suite looks promising, we were unable to test performance, which lagged in both Microsoft Office 95 and Lotus SmartSuite 96. If Corel's software outperforms its Win 95 rivals—and the Windows 3.1 suites—you should try it out. The best news is that you now have more choices, at better prices, for Windows 95 suites.

—Cathy Kenny

Corel WordPerfect Suite 7 for Windows 95, Corel Office Professional

Key Features: Low price • Built-in Internet access • Clip art and hundreds of fonts
Corel Corp., 800/451-5151
Pricing: WordPerfect Suite $395, upgrade $129; Office Professional $695, upgrade $249
Availability: June
Reader service no. 784

QUARTERDECK

Every 33 Seconds, Someone Buys a Copy of QEMM® or MagnaRAM™. Here's Why:

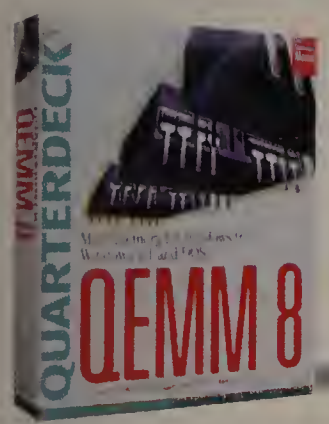
It's simple. No matter how much you spend on memory for your system, you can't do what you want unless that memory is managed properly. So no matter which operating environment you use — Windows 95, Windows 3.1, or DOS — QEMM 8 gives you the 32-bit memory management you need. QEMM is the powerful, painless way to manage your memory.

QEMM lets you run more programs simultaneously, without those dreaded "out of memory" messages. QEMM's memory multiplier, MagnaRAM (also available separately), uses memory compression to increase the amount of memory available in Windows 95 and Windows 3.1. QEMM's Resource Manager controls Windows 3.1's User and GDI resources intelligently to allow you to load more programs at once.

And QEMM's conventional memory management deftly moves parts of the operating system out of the way, along with memory-eating TSRs and drivers, giving you up to 634K of precious conventional memory. All this gives you more memory for your operating environment, your applications, and, when the work is done, for your games. QEMM and MagnaRAM are the results of Quarterdeck's 10 years of leading-edge memory management research.

"QEMM takes memory management to a new level."
PC Magazine, February 6, 1996

"...MagnaRAM 2 is the first and only utility to successfully tackle memory constraints on PCs running Windows 95."
"Stretch your RAM and open more files under Windows 95."
Verdict: ★★★★
PC Computing, March 1996



"...MagnaRAM [is] a hit in "creating" more RAM..."
InfoWorld, November 27, 1995

"...[QEMM8] powerful; easy to install; widest range of memory management features of any product on the market."
InfoWorld, January 22, 1996

"The User Choice Award for Best Memory Managers goes to QEMM."
Jerry Pournelle, BYTE, April 1996

Call us at: (800) 683-6696 or visit our Web Site at: http://www.quarterdeck.com/

Ask for code 01001. E-mail: info@quarterdeck.com

©1996 Quarterdeck Corporation. All rights reserved. 13160 Mindanao Way, Marina del Rey, CA 90292. Quarterdeck and QEMM are registered trademarks. MagnaRAM and the Quarterdeck "Q" symbol are trademarks of Quarterdeck Corporation. All other trademarks or tradenames are the properties of their respective holders

Circle 185 on reader service card

Will Families Say Wow?

EASY ON THE INTERFACE: The new Wow online service sports colorful buttons that make navigating easy for novices and kids.

If you want a simple, economical way to get your family online and don't want your kids roaming solo through cyberspace, CompuServe's new Wow online service is worth a look. Wow is separate from CompuServe—it shares some of the content, but it has its own staff and special interest groups.

Designed for inexperienced PC users, Wow has one of the cleanest, simplest interfaces we've seen, even compared to America Online. The Windows 95–only service eschews cryptic menus and toolbars that baffle many PC novices. Instead, the opening screen sports five big buttons: What's New, My Mail, My News, My Places, and Main Menu. Standard online features—chat rooms, bulletin boards, and access to the Internet—are all available. (A version of Microsoft's Internet Explorer browser is included.)

Wow lets you tailor the interface to individual users by age. At sign-up, you register each user as an adult or child, and then each time a person logs on, the service automatically presents the corresponding view. Children 12 years old and under can use the special kids' view, which has cartoonlike graphics and topics specific to children. Wow gives parents controls over Net access and the option of screening their kids' e-mail. This summer CompuServe will add a teenager view to Wow.

Pricing for Wow is attractive for families: An account can accommodate up to six users (each with their own e-mail address) for a flat fee of $17.95 a month with unlimited access.

Now for the caveats. Wow now lacks the richness of content offered by AOL, CompuServe, and Prodigy, so if you use your online service for business research, this isn't for you. Also, it's very slow, but performance should improve as the kinks are worked out.

—Gabrielle Mitchell

Wow

CompuServe, 800/943-8969
List price: $17.95
Reader service no. 785

Bug Watch Java Bug Puts Your PC at Risk; Two Microsoft Fixes

Netscape Navigator Java Security Flaws

▶ **Bug:** Princeton University computer scientists and other researchers have uncovered **serious security gaps in the Java programming language** built into Netscape's Navigator 2.0 browser. Malicious Java applets (programs downloaded from a remote Web page that run on your system) can in theory read, modify, or delete files on your PC, and access other computers connected to it on a local network. The security flaws also extend to Navigator's JavaScript language and can **compromise your system's privacy:** A Web page can contain a cleverly written piece of JavaScript that tricks your PC into uploading directory listings or sensitive files such as those containing passwords. For a thorough discussion of the dangers of destructive Java applets, see the Web page of Princeton researchers Drew Dean, Ed Felten, and Dan Wallach (http://www.cs.princeton.edu/~ddean/java).

▶ **Fix:** Soon after releasing Navigator 2.0, Netscape released version 2.01, which it says plugs the Java security leaks. You can download Navigator 2.01 from http://home.netscape.com/comprod/mirror/index.html. A patch that upgrades U.S. Security Version 2.0 to 2.01 (see explanation on Netscape's Web page) is available at http://home.netscape.com/comprod/mirror/java-patch-download.html. However, Dean, Felten, and Wallach report that Navigator 2.01 **fixes only a few of the security holes,** and that the only sure way to guard against bad Java is to disable Java and JavaScript in your browser. To decaffeinate Navigator 2.0, select *Options • Security Preferences* and check *Disable Java,* then click *OK.* In version 2.01, you can check *Disable JavaScript.*

In Brief: Two Updates From Microsoft

▶ **Word 95 7.0a.** This new version adds Microsoft's Macro Virus Protection tool, and **updates WordMail to incorporate the latest Exchange e-mail client.** Call Microsoft at 800/360-7561 to order the update on disk (it's not available online) for a $5 shipping fee. The virus tool is also available separately at http://www.microsoft.com/msword/freestuff/mvtool/mvtool2.htm.

▶ **IntelliPoint 1.1, IntelliType 1.1, EasyBall 1.0.** An updated Pointer32 driver remedies SnapTo and PointerWrap feature **incompatibilities with some 16-bit apps,** and General Protection Faults that occur with Windows versions of Quicken 4.0, Quicken Deluxe 5.0, and America Online. Download the update (pnt32upd.exe) from Microsoft's Free Software Web page (http://www.microsoft.com/kb/softlib/). —Scott Spanbauer

Found a hardware or software bug? Post your report on PC World Online or send us e-mail at bugwatch@pcworld.com. We'll try to dig up a fix.

For some people, it's enough to know that MagnaRAM multiplies their computers' memory. Others require a slightly more detailed explanation.

Dan Spear is a Quarterdeck Fellow and Senior Director of Advanced Research. He was the primary developer of QEMM, co-creator of the VCPI Specification, and holds two patents on memory management.

By Dan Spear

MagnaRAM — More Memory Without More Chips.

MagnaRAM is a utility for Windows® 95 and Windows 3.1 that gives you more usable memory. Using memory compression, MagnaRAM simply takes the physical memory on your system and stores more data in it. With MagnaRAM, you can run more and larger programs.

So how does MagnaRAM work? First, let me explain what memory compression and VxDs are all about.

Memory Compression?

If you have 1000 bytes of memory, how can you store more than 1000 bytes of information in it? MagnaRAM uses memory compression to pack up your data to fit into a smaller space.

Several programming techniques allow MagnaRAM to store data in less memory. One method involves noticing a repeating sequence of data, and storing the pattern instead of the data. For example, if you have 1000 bytes of data, all of which are the letter "A," you can represent them as (1000 A's), and save hundreds of bytes.

Open Up Windows With VxDs.

If you want to compress data stored in memory in Windows applications, you need a mechanism which is automatic and invisible — part of the operating system itself. Fortunately, Windows lets you add additional features to the operating system. How? By writing a driver called a VxD. One of the interesting things a VxD can do is enhance another VxD by replacing its functions.

How MagnaRAM Lives Up To Its Name.

MagnaRAM enhances the VxD responsible for virtual memory, which effectively increases memory by temporarily using your hard disk as if it were more memory.

MagnaRAM reserves some physical memory for a compression buffer. It hooks into the service that is responsible for reading and writing data to your hard disk for virtual memory. When the operating system wants to write a page to disk, MagnaRAM copies the data into the compression buffer and tells the operating system that everything's O.K. Later, while the system is idle, MagnaRAM crawls through its buffer compressing the data. If the buffer gets filled up, MagnaRAM writes its compressed data to disk, so you write less to disk. When the operating system needs the data back again, MagnaRAM fetches it from either the buffer or the disk, decompresses it, and hands it back. This is invisible to the applications, the virtual memory system, and even the VxD that writes the data to disk.

This process allows more data to be stored in memory without going to disk because MagnaRAM has compressed the data to a fraction of its original size. Available Windows memory increases by a significant amount, even with the same amount of memory and disk space usage. Although MagnaRAM's compression and decompression do take time, they are typically faster than disk access. System performance can vary depending on the types of applications and the degree of compression that MagnaRAM can achieve.

MagnaRAM will give you more memory; I encourage you to visit your local retailer and try out the product for yourself. For more information, give us a call at 1-800-683-6696. Or go to our website at http://www.quarterdeck.com.

© 1996 Quarterdeck Corporation. 13160 Mindanao Way, Marina del Rey, CA 90292-9705. All rights reserved. Quarterdeck and QEMM are registered trademarks, and the Quarterdeck "Q" symbol and MagnaRAM are trademarks of Quarterdeck Corporation. All other trademarks or tradenames are the properties of their respective holders.

Circle 190 on reader service card

Blueprint for a Simpler PC

Let's face it: For most people, PCs are still too hard to set up. To make the job easier—and perhaps open up the consumer market—Microsoft is spearheading a new initiative to simplify PC hardware. The company's Simply Interactive PC specifications could result in systems that are easier to use, maintain, and upgrade, with better graphics support (for both 3-D and video) and faster access to peripherals and the Internet. Supporters currently include Compaq, Dolby Laboratories, Hewlett-Packard, Intel, and Toshiba.

SIPC systems will not be designed to open as traditional PCs do; instead, you'll add peripherals externally by connecting them to "universal" serial connectors. (Two are specified: the slower-speed Universal Serial Bus for devices such as mice, keyboards, and modems, and the high-speed IEEE 1394 Firewire bus for printers, camcorders, and other consumer electronics products.) A standardized device bay accessible from outside the PC will simplify adding and removing components such as hard drives. And compliant systems will include an "OnNow" capability that lets you start your PC instantly, like a TV or a suspended notebook, instead of having to endure a tedious boot-up.

To confuse matters, Microsoft has also released a set of specifications that define baseline standards for the next generation of conventional Windows systems. The PC 97 spec makes mandatory some features that were optional for Windows certification—and further raises the bar in other areas. For instance, PC 97 systems must support a new common device driver scheme used in both Windows 95 and NT, and must permit extensive software control of internal resources and power management. "Basic" PC 97 computers will require at least a 90-MHz Pentium, 16MB of memory, and hardware support for OnNow. "Entertainment" and "Workstation" PC 97 machines will require at minimum 150-MHz Pentiums (or equivalent) with 16MB and 32MB of RAM, respectively.

Some overlap between the specs means that parts of the SIPC framework will show up first in PC 97 systems, as soon as next year. Fully SIPC devices aren't expected until the following year. Analysts caution that SIPC's demanding requirements won't permit PCs costing less than $1000—which means that Microsoft and system vendors could still see competition from $500 Internet boxes.

—Gabrielle Mitchell

MICROSOFT'S FRAMEWORK FOR EASIER-TO-USE PCs

- The low-speed Universal Serial Bus supports up to 126 serial devices; the high-speed IEEE 1394 Firewire serial bus supports up to 63 devices.
- Device Bay technology enables quick plug-in and removal of internal devices.
- OnNow will let systems turn on instantly, eliminating the need for boot-up.
- Win32 Driver Model, common to both Windows 95 and NT, will encourage the creation of more and better device drivers.
- Smarter local cache will speed recall of Internet-based graphics.
- NTSC hookup will let you connect a PC to a large-screen TV or monitor.

The Web Browser

Electronic Trading: Improving Your Net Return

In the world of investing, paper changes hands so fast you might as well be trading electrons—and now you can. The hottest tip sheet in cyberspace is *Red Herring* magazine. This irreverent periodical on the technology and information industries made a huge splash on America Online, and now its unique mix of analysis and commentary is on the Web (http://www.herring.com/)...Some of the sites that let you log in and initiate trades yourself carry familiar names, such as e.Schwab (yes, *that* Schwab). The service (http://www.schwab.com/) is designed for investors who want to manage small portfolios; market news and quotes are also available on a pay-as-you-go basis...With their minimal office overhead, you'd think discount e-brokerages would flourish—and they show every sign of doing so. E-Trade (http://www.etrade.com/) and National Discount Brokers (http://pawws.secapl.com/ndb/) are two services that charge commissions of less than $25 for up to 5000 shares, a mighty compelling rate considering the hundreds you'd pay elsewhere. At that price, you can afford to move a lot of electrons. —Richard Overton

BUY STOCKS, GET QUOTES, and track your portfolio 24 hours a day, seven days a week, using the E-Trade service.

NEW
WINDOWS 95
Version Now Available!

MAKES ALL RETYPING OBSOLETE.

OMNIPAGE PRO: THE WORLD'S MOST ACCURATE OCR.

Step one: Scan a document. Step two: Press a button to convert that document into editable text and images for your favorite applications.

WHAT'S NEW IN OMNIPAGE PRO FOR WINDOWS 95

- Microsoft Office Compatible
- Integrates with your favorite image editor
- New easier-to-use AutoOCR Toolbar™
- Read faxes directly from Microsoft Exchange
- Automatic OCR scheduling
- HTML output jump starts moving pages to the Web
- OLE 2.0 support, and more

Designed for Microsoft Windows 95

Sound easy? It is. OmniPage® Pro is the world's most accurate Optical Character Recognition (OCR) software, turning your scanned pages into usable, editable text and graphics in seconds.

So now you can accurately enter your letters, faxes, reports, even articles into Word, WordPerfect, Excel, Lotus 1-2-3, PageMaker and many other applications without ever having to type a single word. OmniPage Pro is now available for Windows 95 and Windows 3.1. Which means that—no matter which operating system you use—you can take complete advantage of the most accurate OCR software in the world today.

> "OmniPage Pro is the longtime OCR leader for good reason. It's simple, fast and the most complete package around."
>
> *PC Computing—December 1995*

Call us now to order a copy of OmniPage Pro, or simply visit a local reseller. And then you can really start using your scanner for all it's worth.

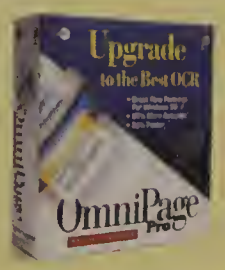
caere®

SPECIAL UPGRADE

$129*

If you have any OmniPage or WordScan product, including those bundled with your HP or other scanner, upgrade to OmniPage Pro for these benefits:

- 65% more accurate
- 35% faster
- New, easier-to-use interface
- True Page® retains text & graphics in their original layout



74% off regular price

Visit a local reseller or call today!

800-736-5735

extension 60

[www.caere.com]

*Suggested price US dollars—subject to change without notice. Caere, the Caere logo, OmniPage, WordScan and True Page are registered trademarks and AutoOCR Toolbar is a trademark of Caere Corporation. All other names are the property of their respective holders. © 1996

Circle 91 on reader service card

O'Hare Airport: 4.3 miles of terminals.

Dallas/Ft. Worth: 4.8 miles.

Denver International: 3.2 miles.

(It occurred to us you might want a lighter notebook.)

intel inside pentium PROCESSOR

Designed for Microsoft® Windows®95

Of course, it also occurred to us that you don't want to lose features while losing weight. Thus, the new AcerNote™ Light notebook computer offers a Pentium® processor, full-size keyboard and large 10.4" color screen.

But it still weighs just 5.8 pounds. Which we think you'll appreciate when you're traveling from, say, Dallas to New York. Half the distance of which is covered while walking to the gate. ACER®

AcerNote Light
100MHz Pentium Processor

- 10.4" Dual Scan Color Display
- 8MB EDO RAM (40MB Max)
- 810MB Hard Drive
- 5.8 Pounds
- Duracell® NiMH Battery
- 1MB Video DRAM
- 2 Type II/1 Type III PCMCIA Slots
- Large Full-Size Keyboard
- 16-bit Sound Blaster™ Compatible Audio
- Touchpad with Ergonomic Palmrest
- 3-Year Limited Warranty/ 1-Year Rapid Repair
- *Double your RAM to 16MB for only $299*

$1999

TO ORDER, CALL 1-800-574-ACER
6am-6pm Weekdays, 8am-4pm Saturday Pacific Time

(It also occurred to us you might want other options.)

AcerNote Light
100MHz Pentium Processor

- 10.4" Active Matrix Color Display
- 16MB RAM (40MB Max)
- 810MB Hard Drive
- 5.8 Pounds
- Duracell® NiMH Battery
- 1MB Video DRAM
- 2 Type II/1 Type III PCMCIA Slots
- Large Full-Size Keyboard
- 16-bit Sound Blaster™ Compatible Audio
- Touchpad with Ergonomic Palmrest
- 3-Year Limited Warranty/ 1-Year Rapid Repair

$2499

AcerNote Pro
120MHz Pentium Processor

- 10.4" Dual Scan Color Display
- 16MB RAM (40MB Max)
- 1GB Hard Drive
- 256KB L2 Cache
- 6.5 Pounds
- Dual Battery Operation ***(Second Battery Free with Purchase)***
- 1MB Video DRAM
- 2 Type II/1 Type III PCMCIA Slots
- 16-bit Sound Blaster™ Compatible Audio
- Touchpad with Ergonomic Palmrest
- 3-Year Limited Warranty/ 1-Year Rapid Repair
- ***28.8 Modem Included***

$2999

AcerNote Pro
120MHz Pentium Processor

- 10.4" Active Matrix Color Display
- 24MB RAM (40MB Max)
- 1GB Hard Drive
- 256KB L2 Cache
- 6.5 Pounds
- Dual Battery Operation ***(Second Battery Free with Purchase)***
- 1MB Video DRAM
- 2 Type II/1 Type III PCMCIA Slots
- 16-bit Sound Blaster™ Compatible Audio
- Touchpad with Ergonomic Palmrest
- 3-Year Limited Warranty/ 1-Year Rapid Repair
- ***14.4 Modem Included***

$3499

AcerNote Pro
120MHz Pentium Processor

- 10.4" Active Matrix Color or Dual Scan Color Display
- 40MB RAM (40MB Max)
- 1GB Hard Drive
- 256KB L2 Cache
- 6.5 Pounds
- Dual Battery Operation ***(Second Battery Free with Purchase)***
- 1MB Video DRAM
- 2 Type II/1 Type III PCMCIA Slots
- 16-bit Sound Blaster™ Compatible Audio
- Touchpad with Ergonomic Palmrest
- 3-Year Limited Warranty/ 1-Year Rapid Repair
- ***28.8 Modem Included***

$3999

AcerDock™
Docking Station

- 200-Watt Power Supply
- Quad-Speed CD-ROM Drive
- 2-button Mouse
- Stand-alone Speakers
- Standard Keyboard
- 3 ISA Expansion Ports/ 3 Storage Bays
- Removable Cover for External CRT
- Built-in Battery Charger Bay

$799

ACER®

intel inside pentium PROCESSOR

Designed for Microsoft® Windows®95

TO ORDER, CALL 1-800-574-ACER

6am-6pm Weekdays, 8am-4pm Saturday Pacific Time

Please call 1-800-574-ACER for details on the limited warranty. Return shipping and insurance charges are the responsibility of the customer. Not available outside U.S. Products, availability, prices and programs are subject to change or cancellation without notice. Shipping and handling charges are extra. Acer and the Acer logo are registered trademarks and AcerDock and AcerNote are trademarks of Acer America Corporation and Acer Inc. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. All other brands and product names are trademarks or registered trademarks of their respective companies. © 1996 Acer America Corporation.

Canon and NEC P-166s Are Loaded But a Little Slow

After the initial flurry of high-end machines designed for power users, prices of systems on the Intel Pentium-166 are beginning to fall—albeit slowly. Both Canon and NEC have just rolled out loaded multimedia systems designed for the family and home office markets. With street prices ranging from $2700 to $3200 sans monitor, they aren't exactly inexpensive, but they show where prices for P-166 home systems are going.

Canon Innova Media MT 9600

Canon's P-166 entry has virtually all the goodies you'd expect on a loaded, high-end PC, including 16MB of RAM, 256K of secondary cache, a 1.6GB EIDE hard disk, 6X CD-ROM drive, sound card, microphone, speakers (with Spatializer 3D effects), and a 64-bit PCI graphics card. The Innova includes an IrDA-compliant infrared interface for wireless file transfers with infrared-equipped notebooks or printing with the latest generation of infrared-equipped printers. The system's internal modem is 28.8 kbps, acceptable for surfing the World Wide Web, and includes simultaneous voice/data capabilities. But to use that feature, the modem at the other end of the phone line has to have SVD capabilities as well.

The Innova is designed to plug in and go, and is chock-full of preloaded software so you won't have to configure your brand new system.

COMMUNICATIONS CENTER: The Canon Innova Media MT 9600 includes a 28.8 kbps simultaneous voice/data modem.

NEC Ready 9619

NEC has always produced solid multimedia systems, and the Ready 9619 is no exception. On the hardware side, its specifications are virtually identical to the Canon Innova's, except the unit comes with a 2GB hard disk. Like the Innova, the Ready comes equipped with an IrDA-compliant infrared interface. However, NEC goes one better than Canon by including a wireless remote control that lets you direct the Ready's audio, video, and fax/telephony features without having to use the keyboard.

NEC loaded the Ready 9619 with an outstanding beginner's tutorial and a raft of software.

NEC's Ready includes more bundled Microsoft applications than Canon's Innova, but both PCs come with several educational and entertainment titles. What really sets the Ready 9619 apart is the included CD-ROM title Merlin, a "video wizard": It's a major interactive sound-and-video production that effectively trains beginners in the intricacies of Windows 95 and the various features of the Ready 9619.

Measuring Performance

Both of these machines are fast, especially if you've been limping along with a slower Pentium or an aging 486. But they're no match for other P-166 systems we've tested. The NEC Ready 9619 was particularly disappointing: The PC World Test Center found that it performed slower than many P-133s. The Canon Innova Media MT 9600 was a bit better, performing on a par with P-150s we've tested. (See "The Premier Home PC Shopping List" in this issue for a review of several home computers.) These results aren't completely surprising. Because both of these PCs are designed for computer superstores and other high-volume retailers, they aren't as finely tuned as high-end business machines. Still, both the Canon and the NEC are good values. If they fit your budget (figure on spending another $750 for a decent-quality 17-inch monitor), you'll be the envy of the neighborhood, at least for the time being.

Canon Innova Media MT 9600, NEC Ready 9619

High-end P-166 multimedia PCs for the family and the home office.

Canon Computer Systems, Inc.
800/848-4123
http://www.usa.canon.com
Street price: $3199
Reader service no. 687

NEC Technologies, Inc.
800/632-4636
http://www.nectech.com
Street price: $2699
Reader service no. 688

NEC SuperScript 860: Fast Printer, Low Price

NEC has taken the wraps off what could become a new standard in personal printers, the SuperScript 860. This innovative laser printer incorporates a new technology that brings high-end features and performance to the home and small office.

The SuperScript 860 is an 8-page-per-minute, 600 dots-per-inch laser printer. That's powerful for a personal laser, but it's also the first to use PrintGear, a new technology from Adobe, the makers of PostScript. PrintGear integrates capabilities that are rare among personal lasers, such as customizable watermarks and duplex (double-sided), poster, and booklet printing. And if you need to preview a presentation, or want to save paper, PrintGear lets lets you print several pages side-by-side on one sheet.

The SuperScript 860 is compact and attractive—until you open the special tray for loading thicker media such as envelopes or labels. The tray's four hinged, folding pieces look and feel awkward.

Text output is superb, and readable down to a minuscule 2-point size. Line art and gray-scale images are also impressive. The SuperScript 860 comes with 1MB of RAM enhanced by Adobe Memory Booster, which makes the 1MB work as if 3MB were installed. Memory can be upgraded to 5MB by adding a standard 72-pin SIMM. You probably won't need the extra memory: In our informal tests we found that large graphics files over 1MB in size printed only slightly faster in the 5MB configuration.

At $499, the SuperScript 860 is an affordable option for home users who want the features generally found in a workgroup printer, but don't want to pay for them.

—Bill Underwood

PRINTING PRETTY: NEC's innovative SuperScript 860 features outstanding print quality—even down to 2-point size.

NEC SuperScript 860

A personal printer with industrial-strength features.
NEC Technologies, Inc.
415/528-6000
http://www.nec.com
Street price: $499
Reader service no. 689

IBM's New Budget ThinkPads

Budget notebooks always used to disappoint: They reminded you of a budget hotel that promised free breakfasts and then delivered stale doughnuts. But vendors such as Toshiba and Samsung have made big improvements in $2000-range notebooks this year. Now IBM has joined the trend with its revamped ThinkPad 365 models. Expected to sell for $1799, the ThinkPad 365e uses a Cyrix 5x86 processor to achieve approximately Pentium-75–level performance. The ThinkPad 365x sells for about $1999 and runs on a 100-MHz Pentium chip. IBM hasn't built a perfect notebook, but that's hard to achieve at this price.

I reviewed a preproduction ThinkPad 365x, which wasn't ready for speed or battery testing. The ThinkPad 365e, which I did not examine, and 365x notebooks come with 8MB of EDO RAM and PCI bus video. IBM did not include secondary cache, which would have boosted speed but increased the price. The 365e and 365x notebooks provide bigger displays than previous budget ThinkPads: Either system can come with an 11.3-inch dual-scan; the 365x will also accept a 10.4-inch active-matrix screen. Both are SuperVGA resolution. Another nice touch: Infrared ports are located on the front and back of the notebooks.

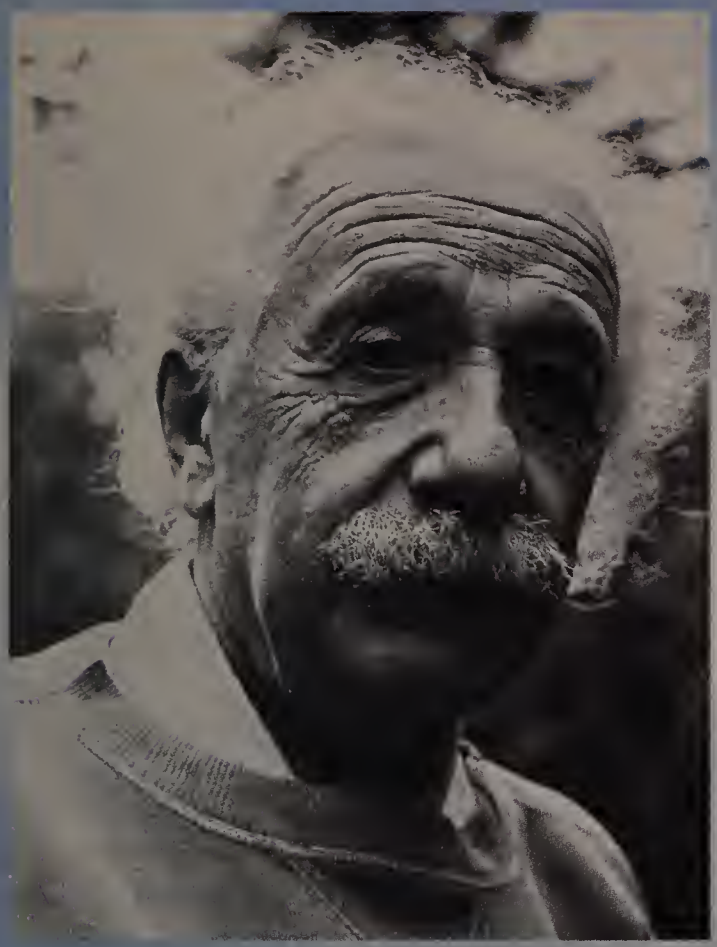
These notebooks don't have the modularity of higher-end ThinkPads. They come with a nonremovable floppy drive and the choice of a nonremovable 540MB or 810MB hard drive, and have two Type II PC Card slots that can also accept one Type III PC Card. (Some models will ship with a 4X CD-ROM drive instead of the floppy drive. Pricing wasn't set at press time.) Also included: 16-bit Sound Blaster sound capabilities with FM synthesis. The NiMH battery will last for about 3 hours, according to the company; you can't add a second battery.

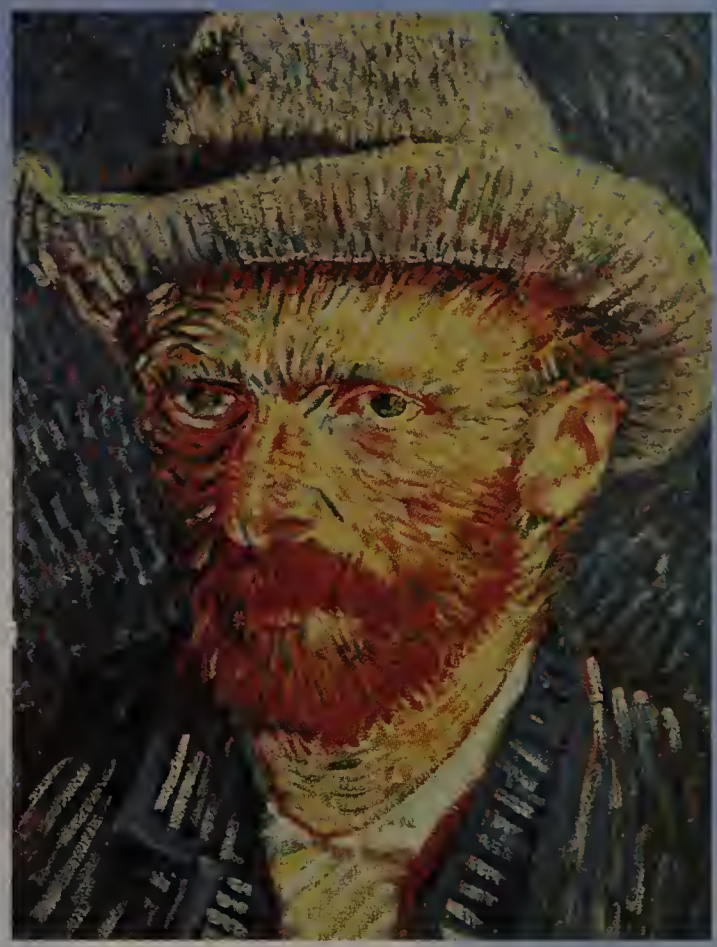
One complaint: I didn't like the keyboard arrangement, which lacks a palm rest and left my wrists hanging off the edge of the notebook. But if you can live with the trade-offs, the prices are hard to beat.

—Laurianne McLaughlin

IBM ThinkPad 365e, 365x

New budget notebooks with bigger screens, slim options.
IBM
800/772-2227
Street price: 365e $1799, 365x $1999





ABC Graphics Suite. Because in today's business world, you're expected to be both.

ONLY $149.95*

To stay ahead, you need both the brilliant logic of Einstein, and the bold creativity of Van Gogh. And the right tools to keep up–**ABC Graphics Suite.** Three powerful programs in one package that let you diagram one minute, illustrate or image edit the next.

Microsoft® Office™ compatible and designed for Win NT and Win 95, ABC Graphics Suite gives you true 32–bit multithreading technology, plus the ease and speed of a drag and drop environment.

Powerful. Versatile. Indispensable. The software that brings the art and science of business together. ABC Graphics Suite.

Microsoft Windows 95

Microsoft Office Compatible

Download our free Internet Graphics Pack and explore the details of ABC Graphics Suite:
www.micrografx.com

Use our automated fax back system or speak with a Micrografx representative:
1-800-562-8571

MICROGRAFX

ABC FlowCharter® 6.0

- Simple to sophisticated business diagramming
- Over 2,000 diagramming symbols for increased versatility
- Intelligent line routing and automatic line crossovers for better readability

Micrografx Designer™ 6.0

- Precision drawing for illustration and graphics design
- Over 32,000 layers for unlimited graphics flexibility
- EPS output for better color separations

Picture Publisher® 6.0

- Fast and powerful photo retouching and image editing
- Infinite Undo™ for unparalleled creative freedom
- Object Layers™ for increased productivity

Also included:

- Instant 3D™ to easily enhance text and graphics
- ABC Media Manager™ for "drag and drop" control of all graphics, such as clipart and logos
- 30,000 pieces of clipart, images and fonts

In Canada, call 1-800-360-8464. *Canadian E.R.P. $199.95 ©1996 Micrografx, Inc. All rights reserved. All product names are trademarks of their respective companies.
Dr. Albert Einstein licensed by the Hebrew University. Represented by The Roger Richman Agency, Inc., Beverly Hills, CA.

Affordable 3GB Plug-In Tape Backups

Not too long ago, tape backup drives with the capacity to store over 1GB of data on a tape were priced at around $500 or more. In addition, the devices were all internal models, which made it impractical to share them among multiple personal computers.

The $299 Iomega Ditto Easy 3200 tape drive—the high-capacity stablemate of the popular Ditto Easy 800—changes all that: It easily handles hard drives up to 2GB and larger, and there's room on the included Travan 3 tape for 1.6GB of uncompressed data and up to 3.2GB compressed. The Ditto Easy's parallel port model, which includes a pass-through port for the printer, costs no more than the internal version and can be used to back up your notebook or more than one desktop computer.

The portable tape drive really shines in ease of installation and use. It took us just 15 minutes to install the parallel port version, and it's remarkably fast, backing up about 800MB in an hour on our Pentium PC. The internal version should be even faster if you use it with the optional $79.95 Ditto dash accelerator card.

The Windows 3.1 software works fine under Windows 95, backing up the Registry and long file names—and you can continue working undisturbed while the backup is running, whether you're using Windows 95 or Windows 3.1. As it happens, it's also easier to use than any of the 32-bit Windows 95 backup software we've seen, performing a full backup on installation and backing up changed files at the click of a handy on-screen button.

—Rex Farrance

Easy Plug, Easy Go: The Big Gulp of tape back-up drives—Iomega's Ditto Easy 3200—takes only a few minutes to configure.

Iomega Ditto Easy 3200

Affordable, easy-to-use tape backup drive costs the same for the parallel port and internal versions.
Iomega
800/697-8833, 801/778-1000
http://www.iomega.com
Street price: $299, additional Travan 3 tapes $40 each
Reader service no. 690

HP SureStore Drives: More Storage Fast

With space-hungry software like Office 95 and its jumbo files crowding your hard drive, it's no wonder you're short on storage space. Fortunately, it's easier than ever to replace a hard disk or, if you have a spare bay, add a second drive. At $275, Hewlett-Packard's new 1300MB SureStore 1300A and its sibling, the $399 2000MB SureStore 2000A, are affordable solutions.

These 4500-rpm Enhanced IDE drives have 12ms average seek times and support PIO Mode 4 and DMA Mode 2, which allow for a 16.7MB per second maximum transfer rate. They can plug right into the cable that attaches to your current EIDE or Fast ATA-2 hard drive, and if your current drive supports PIO Mode 4 and DMA Mode 2, you can add the SureStore to the second data connector on your IDE cable as a slave drive and still get the best performance from both. (If you have an older drive, contact its manufacturer or HP to find out the most efficient way to use the two drives together.)

Installing the SureStore 2000A was no sweat, thanks to the well-illustrated, step-by-step fold-out guide. After backing up our original drive, a 1080MB Seagate ST-31220A, installation took just a half hour from beginning to end, including time to modify the CMOS start-up settings to identify the new drive, and run the SureStore Disk Manager. We even found a printable jumper diagram in the on-screen documentation that made it a snap to configure the Seagate as the master drive. Finally, we used the SureStore's bundled installation utility (written by Ontrack) to set up the partitions we wanted on the new drive, expanding our original storage capacity from 1GB to 3GB without disturbing our original drive letters, programs, or data.

These new drives join HP's existing 1080MB and 1600MB kits. If a drive should fail within the three-year warranty period, the company's Express Exchange program promises to replace it within 24 hours in most locations.

—Rex Farrance

HP SureStore 1300A, 2000A

Expanding storage space is easy, fast, and inexpensive.
Hewlett-Packard
800/826-4111, 208/396-6000
http://www.hp.com
Street price: 1300A $275, 2000A $399
Reader service no. 691

"OF THE THREE PROGRAMS TESTED ONLY UNINSTALLER DID NOT OFFER TO REMOVE CRUCIAL WINDOWS FILES."

— PC MAGAZINE ONLINE, FEB. 26, 1996
(After reviewing UnInstaller,™ CleanSweep® and Remove-It.®)

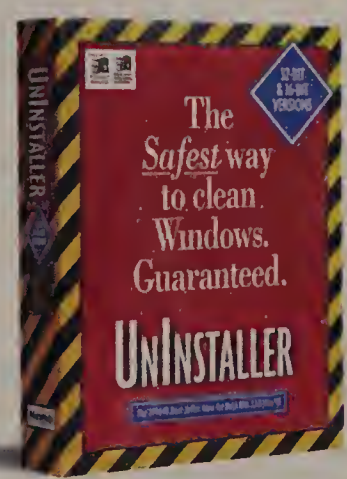
Only UnInstaller™ from MicroHelp gives you absolute peace of mind to safely clean-up your hard drive. With its exclusive SmartLinks™ technology, UnInstaller performs an intelligent series of scans on your hard drive until it thoroughly understands the inter-relationships of files and programs. Without this technology, even an experienced user may find it easy to accidentally remove a crucial file.

Despite popular belief, Windows 95 applications aren't very thorough at automatically removing themselves from your hard drive. Regardless of which version of Windows you use, you need UnInstaller to continually clean things up. UnInstaller Works with both 16-bit and 32-bit applications.

And, as an added safety net, UnInstaller automatically compresses and backs-up everything it removes. So, as you clean off bits and pieces of old files, you can take comfort in being able to put things back exactly as they were with the simple click of a button.

Of course, with other deletion programs you can have the experience of getting rid of things you never meant to get rid of. Which may be good for us, but bad for you.

It's what you don't see on your hard drive that causes problems. Every application puts bits and pieces of itself in places you don't know about. Without UnInstaller, things can slow down — or come to a screeching halt.



Why take your chances with just any old clean-up program? UnInstaller is the No. 1-selling Windows utility on the market with more than a million copies sold.

1-800-922-3383

Available at your local software store.
MicroHelp is at www.microhelp.com

Circle 153 on reader service card

PowerDesk, the highly acclaimed file management and desktop enhancement utility that truly unleashes the hidden power of Windows 95, is also a MicroHelp product.

©1996 MicroHelp, Inc. All rights reserved. UnInstaller, PowerDesk and SmartLinks are trademarks of MicroHelp, Inc. All other trademarks are properties of their respective owners. Windows is a registered trademark of Microsoft.

MicroHelp

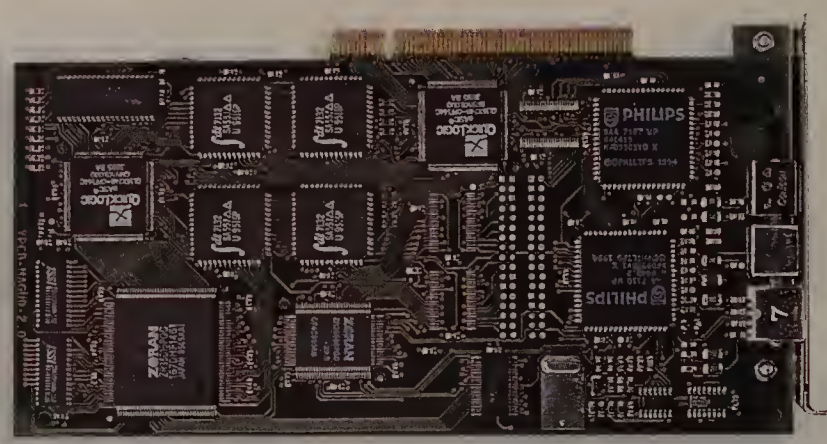
HEY, EVERYONE CAN USE A LITTLE HELP.

Miro Makes Video Capture Affordable

Until recently, if you wanted to use your PC to capture and edit video for use in presentations, training materials, or other multimedia applications, your choices weren't very attractive. The highest-quality video capture products cost several thousand dollars, while the affordable capture cards were usually ISA based and didn't work that well. Several new products, including the miroVideo DC20 and the Truevision Bravado, let you do professional-level video capture and editing for under $1000.

The miroVideo DC20 and the Truevision Bravado are 32-bit PCI add-in boards, which are much faster than ISA-based boards. And both compress video in Motion JPEG format. Other formats, most notably MPEG, may provide better playback because of the way they *interleave*, or blend, sound and video, but they're not easily edited. Both boards produce AVI files that can be played on any Windows PC.

We tested a shipping version of the miroVideo DC20 and found it extremely easy to use. Windows 95 recognized the new board right away and prompted us for the drivers. The quality of the video we captured was smooth, with very few frames dropped. The board has S-Video and Composite ports for connecting a VCR or camcorder, as well as a Y connector for viewing your video on a television set.



THE MIROVIDEO DC20's PCI interface gives it the necessary speed for high-quality video capture and editing.

The miroVideo DC20 will run on a 486DX2-66 with 8MB of RAM, but you should really use it on a Pentium-90 or better with at least 16MB of RAM. Also, a fast SCSI-2 hard drive will give you the best performance, allowing you to compress in real time. The miroVideo DC20 comes with "lite" editions of Adobe's Photoshop and Premiere, as well as Asymetrix 3D F/X.

The Truevision Bravado was not ready for review, but it should be available by the time you read this. It's similar to the miroVideo DC20, except it's bundled with the new, 32-bit version of Adobe Premiere.

—Brad Grimes

miroVideo DC20

High-quality video capture and editing.
miro Computer Products
800/249-6476
List price: $999
Reader service no. 692

Diamond Adds TV, 3-D to Its Graphics Boards

Diamond Multimedia has expanded the capabilities of traditional graphics boards. The new Diamond Stealth64 Video 2201TV turns your PC into a TV, while the new Diamond Stealth 3D 2000 speeds up the task of creating three-dimensional graphics.

The Diamond Stealth64 Video 2201TV is nearly identical to the Stealth64 Video 2201XL, which ranks fifth on this month's Top 10 Graphics Boards chart (see "Speeding Down Highway 95"). But the TV tuner increases the cost of the Stealth64 Video 2201TV to $269; the Stealth64 Video 2201XL sells for $197.

Although your PC/TV's reception will depend on the quality of the signal coming into your system, setting up the Stealth64 Video 2201TV requires only that you plug your cable or TV antenna into the board. And as a graphics board, the shipping Stealth64 Video 2201TV we examined didn't compromise performance. Our tests showed that at 800 by 600 resolution, the board performs on a par with the Stealth64 Video 2201XL.

Diamond ships its new board with a Windows 3.*x* and Win 95 program that simulates a TV's remote control. You can use the Diamond board to capture images or streams of video. But the video files eat up enormous chunks of hard disk space. It's up to you to determine if watching TV on your PC makes sense.

We also examined a beta version of Diamond's Stealth 3D 2000. While similar to the Stealth64 Video 2201XL, this board has additional functions that accelerate 3-D rendering. It's expected to sell for between $199 and $249 when it ships this spring. The 3-D will make games more exciting and let you add slick 3-D graphics to your presentations. We were impressed by the realistic 3-D images, and the Stealth 3D 2000 was equally impressive as a graphics board. With 2MB of EDO DRAM, it was the second fastest board we've ever tested under Windows 95.

—Brad Grimes

Diamond Stealth64 Video 2201TV

Turns your PC into a TV.
Street price: $269

Diamond Stealth 3D 2000

Fast graphics board with 3-D acceleration.
Street price: $199 to $249
Diamond Multimedia
800/468-5846
Reader service no. 699

10X Generation

The World's First 10X CD-ROM Drive

Pinnacle Micro introduces the world's first **10X** CD-ROM drive for only **$299**. The 10Xtreme™ is the fastest CD-ROM drive on the market with a **1.5 MB/second** data transfer rate. This next generation CD-ROM drive is available for use with any PC/AT or compatible computer. It fits into any 5.25" half-height open bay and includes an IDE controller interface with cables to install quickly, making it a simple add-on to any system.

The **10Xtreme**™ surpasses existing generations of 4X, 6X and 8X CD-ROM drives with unbeatable performance and value! It also ships with a **free** CD called "UP!", a unique multimedia software title with 100 digital video startup clips. Now you can transfer and download files with graphics, text, databases or video faster than ever before. So get with the **10X generation** and order today.

For more information or a local dealer: **800-553-7070**

Circle 145 on reader service card

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY®

Tel: 714-789-3000 Fax: 714-789-3150 • http://www.pinnaclemicro.com

Scanner Mavens: OCR Packages Save Time, Aggravation

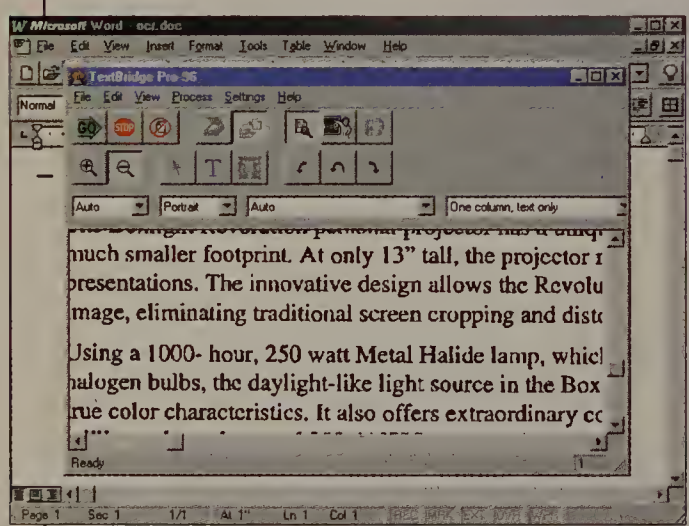
If you've been giving short shrift to optical character recognition software, it's time to take a fresh look at these packages. Prices for OCR software have come down while accuracy has improved. And at the same time, the scanners needed to convert paper documents into an electronic format are becoming affordable.

Caere's OmniPage Pro for Windows 95 and Xerox's TextBridge Pro 96 are the first Win 95 versions of the two leading OCR packages. Both products, which run only under Windows 95, are surprisingly effective at turning scanned pages (or pages received via fax-modem) into editable text that you can refine in a word processor, e-mail to your colleagues, or post on the Internet as a Web page.

Of the two packages, OmniPage has undergone the most visible changes. It now sports a Microsoft Office–compatible interface, the most impressive feature of which is the OCR Wizard that walks you through each step of scanning and converting a document. Beginners can let OmniPage handle the whole process almost by itself; experienced users can dig into the program's advanced tools for viewing documents and customizing settings.

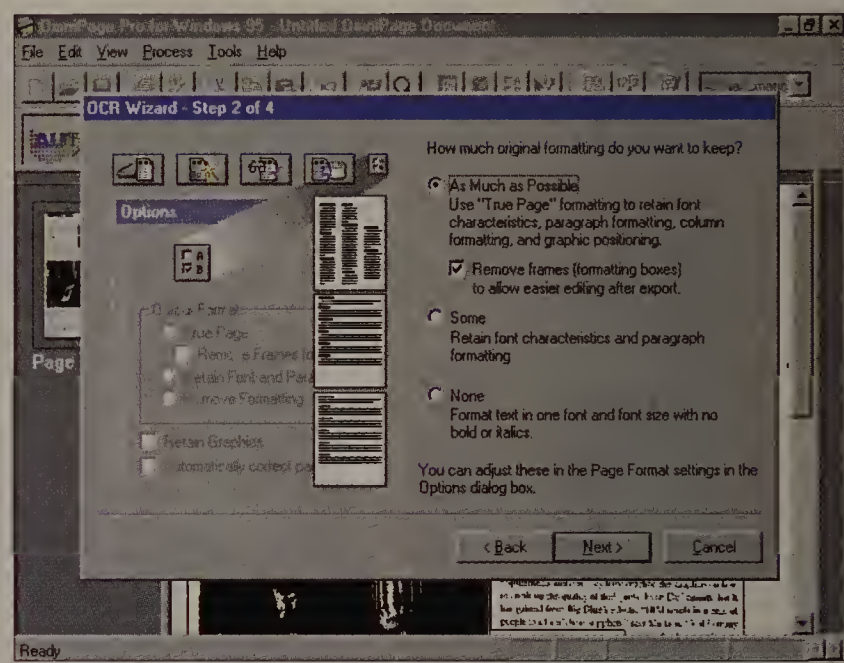
Compared to OmniPage Pro's rich interface, TextBridge looks old-fashioned, with drab icons, fewer options, and no wizard-style help. Still, it's easy to use, especially if you launch it from within your word processor. (OmniPage works from within word processors too, but in a format that lacks some of its new features.) TextBridge lets you proofread scanned documents from within Microsoft Word or WordPerfect: You can see the scanned image and correct any words the OCR program mangled beyond recognition. But OmniPage's similar tool, which you use within OmniPage itself, is more powerful and easier to use.

OmniPage and TextBridge both can now perform OCR on faxes stored in the Win 95 Exchange in-box. Also, they can export text as hypertext markup language files for Web sites. And TextBridge bundles HoTMetaL Light, an HTML editor that lets you add graphics and hypertext links to your text. OmniPage, however, doesn't provide an HTML editor.



OLD-FASHIONED INTERFACE: TextBridge Pro 96 works best as a word processor add-on.

Accuracy and speed haven't changed in these versions. Each does a fine job with simple, clean printed pages, making few if any text errors. Of course, a third-generation photocopy filled with offbeat fonts will need lots of corrections. But that's still quicker than typing. Both products can turn pages filled with pictures and multiple columns into documents that retain the original formatting. However, with even moderately complex pages, you'll get only a rough approximation that has muddy, monochrome graphics.



OMNIPAGE'S OCR WIZARD steers new users through complicated tasks and can automate the entire process.

A word about pricing: TextBridge's street price of $260 is far lower than the $499 OmniPage. But both companies offer economical $129 upgrades for software that comes with most scanners. The TextBridge upgrade is good for any OCR package, but Caere's can be applied only to Caere or Calera products (the two companies have merged).

Based on the prerelease versions I tested, neither product is the obvious winner for every OCR user. OmniPage is a good choice if you plan to use OCR as a stand-alone application in a variety of situations. But if you're simply interested in getting text off paper and into Word or WordPerfect, TextBridge is worth considering.

—Harry McCracken

OmniPage Pro for Windows 95

Feature-rich OCR adds an up-to-date interface.
Caere Corp.
800/535-7226
Street price: $499, upgrade from Caere OCR product $129
Reader service no. 693

TextBridge Pro 96

Affordable OCR with strong word processor hooks and Internet features.
Xerox Corp.
800/248-6550
Street price: $260, competitive upgrade $129
Reader service no. 694

The Compaq LTE 5000 Can Be Anything You Want It To Be.

And Now, It Can Be Yours For Just $2,899.*

We figured you'd expect the Compaq® LTE® 5000 to come complete with a powerful Pentium® processor, 8MB RAM, a 10.4" color dual scan display and two PCMCIA slots. Standard. So what makes this notebook so exceptional?

Well, the LTE 5000 is completely modular, so you can mix and match capabilities however you like. You can add an optional QuadSpeed CD-ROM drive, an extra battery — or even an extra hard drive. Just plug your choice of interchangeable devices into the front-loading MultiBay,™ and the LTE 5000 is as flexible as you are — no matter where you take it.

Then, whenever you need it, you can add the optional MultiBay Expansion Base, with integrated Ethernet. You'll get two more MultiBays — for additional modular devices, and the ultimate mix of power and flexibility.

You'll find that the best thing about the LTE 5000 is what you make of it. So call one of the numbers below, and make one yours today.

1-800-888-5819
WEEKDAYS 7-7, SAT. 9-3 CST
ASK FOR OUR NEW FREE CATALOG

COMPAQ DirectPlus

1-800-345-1518
FOR THE NAME OF YOUR NEAREST COMPAQ AUTHORIZED RESELLER

intel inside pentium® PROCESSOR

*All prices shown are Compaq DirectPlus prices. Reseller prices may vary. Other models available; call for pricing. Call for lease prices. Leasing is provided for a term of 36 months and is subject to approved credit and certain terms and conditions. Call for details. Battery packs and certain options are covered by a One-Year Warranty. The LTE 5000 is covered by a Three-Year Worldwide Limited Warranty. Offer available in the U.S. only. © 1996 Compaq Computer Corporation. All Rights Reserved. Compaq and the Compaq Logo Registered U.S. Patent and Trademark Office. DirectPlus is a registered service mark. LTE is a registered trademark and MultiBay is a trademark of Compaq Computer Corporation. Products, prices and programs are subject to change without notice. Other products are trademarks or registered trademarks of their respective companies. Pentium and the Intel Inside logo are registered trademarks of Intel Corporation in the U.S. and other countries.

Interleaf 6 Grows on Windows 95

Little compares to the anxiety you feel when your word processor chokes on a hundred-page document. For some time, Interleaf has been legendary in UNIX circles for its power and stability in creating large technical documents. With the release of the Windows 95 version, those traits come to desktop PCs.

So Much Style

Style sheets, called *components* in Interleaf 6, are the backbone of automated text handling in most word processing and desktop publishing products, but I have seen few style sheets with capabilities as broad as those in Interleaf 6.

Components in Interleaf 6 not only automate typographic formatting, they handle content and document assembly, too. You can identify variable text, linked documents, and even frames and other graphics. These styles can be edited globally, applying changes to every element tagged with that style in your document.

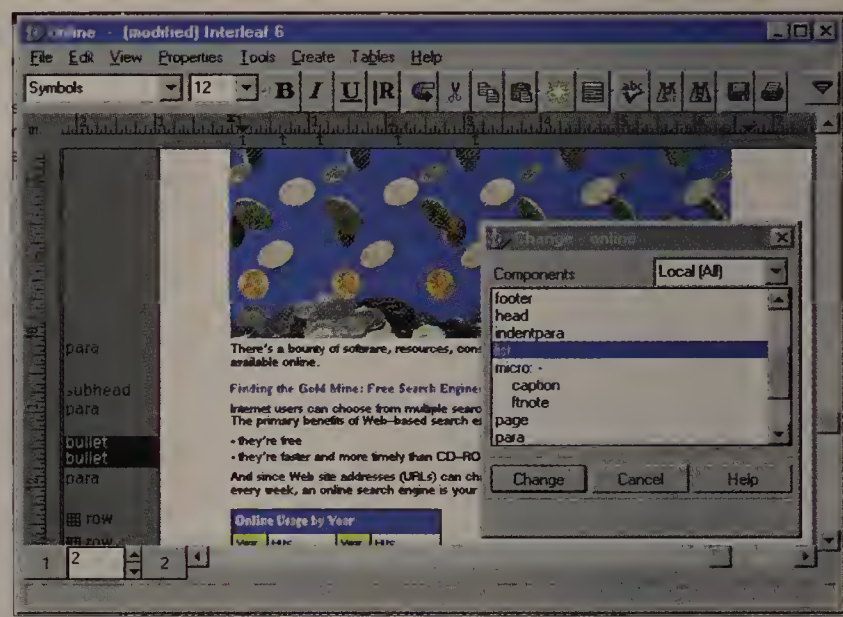
Automation Without Heartache

Interleaf 6 also excels in workgroup collaboration. An edit trace feature provides a history of a document's editing, authors, and formats. Sophisticated book- and collection-handling features organize assorted documents from multiple authors into a single large, complex document. The software reconciles differences in text and graphics formatting and certain kinds of content, and it automatically generates layouts with updated footnotes, indexes, and cross-references.

Despite these publishing abilities, don't expect many graphic designers to convert. It is most useful for specialized documents, not general desktop design. For the high cost of $1895, Interleaf 6 for Windows 95 also includes a Windows NT version on its CD-ROM.

If you are publishing large quantities of complex technical documents, Interleaf 6 is probably the most complete choice. If your needs are smaller, such as newsletters, magazines, or reports, PageMaker or QuarkXPress is more suitable.

—Luis Camus



COMPONENTS IN INTERLEAF 6 offer better flexibility and control than other page layout programs do.

Interleaf 6 Windows 95 and Windows NT

Stable, structured publishing of complex documents from the desktop.
Interleaf Corp.
617/290-4990
List price: $1895
Reader service no. 695

Web.Data Makes Databases Web.Friendly

A compelling application for the World Wide Web is publishing database information, and a new tool from Corel makes this difficult task easier. Web.Data 6.0 lets you reformat a database file into hypertext markup language ready for posting on the Web.

In my first go-around with Web.Data, it took me less than 10 minutes to transform a dBASE file into an HTML document. This included defining the records I wanted to use, sorting the selected data, and changing the output file format to HTML 3.0. I was also able to add graphics to the output file, as well as change the *output fields* (the database's named elements that people would see on the Web) and change the spacing to make it more to my liking.

With Web.Data, you go through a step-by-step process to set up *recipes*, or database publishing specifications. You can use database information from most programs (Access, dBASE, FoxPro, Lotus 1-2-3, Oracle, Paradox, and so on), add formatting, turn the result into an HTML file, and publish that file on the World Wide Web. The recipes can be accessed later to publish an updated version of a database without having to set up the HTML file definition again.

Web.Data's neat features include a "keypad" of HTML codes to add characteristics such as boldface type or extra lines. And you can have the program substitute text for missing or repeating values, as well as create dictionaries to substitute text for codes like product numbers.

Web.Data is a useful tool for database publishing, but Windows 3.*x* users are out of luck: This 32-bit app is for Windows 95 and Windows NT only.

—Celeste Robinson

Corel Web.Data 6.0

Step-by-step tool for publishing database information to the World Wide Web.
Corel Corp.
800/205-4295, 613/728-3733
Street price: $99
Reader service no. 696

SEND FOR YOUR CATALOG TODAY. IT'S FREE.

To get your copy of the latest Compaq® DirectPlus® Catalog, please take a minute to fill out and mail this card. We'll send you a copy of our full-color catalog right away — and keep you posted on special Compaq DirectPlus promotions and offers. If you prefer, simply call us directly at 1-800-888-6139.

COMPAQ DirectPlus

Name (required) First _____ Last _____ Title _____

Company _____ How many employees are in your company? _____

Address _____ What industry are you in? _____

City _____ State _____ Zip _____

( ) _____ ( ) _____

Phone # Fax #

PCW 6/96S

Please indicate the number of units you plan to purchase:		Immediately	1-3 months	4-6 months
	Desktops			
	Portables			

COMPAQ
DirectPlus

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 8139 HOUSTON TX

POSTAGE WILL BE PAID BY ADDRESSEE

COMPAQ DIRECTPLUS
PO BOX 692025
HOUSTON TX 77269-9931

At Just $1,475
Your Next PC Can Be A Compaq.

ProLinea 5100e
(monitor not included)

Looking for a great desktop PC for your business? With its powerful Pentium® processor, lightning speed, and easy upgradability, the Compaq® ProLinea® 5100e desktop PC will impress you. At its incredible new low price, it will astound you.

Add a variety of unique serviceability features that help decrease downtime and service costs and you've got a PC that fits quite nicely into your growing business.

So now you have no reason to settle for anything less than a Compaq — and every reason to call right now.

THE COMPAQ PROLINEA 5100e — $1,475*

- 100MHz Pentium Processor
- 8MB RAM expandable to 136MB
- 630MB Hard Drive
- 3.5" 1.44MB Diskette Drive
- Integrated PCI IDE Interface
- PCI Local Bus Architecture
- Plug-and-Play Compliant with Windows® 95
- Choice of Windows 95 or Windows 3.1 Preinstalled
- 3-Year Limited Warranty**
- With Compaq 140 Color Monitor (12.9" viewable) Add $255*
- With Compaq 150 Color Monitor (13.8" viewable) Add $375*
- With 1GB Hard Drive Add $130*

1-800-888-6139
WEEKDAYS 7-7, SAT. 9-3 CST
ASK FOR OUR NEW FREE CATALOG

COMPAQ DirectPlus®

1-800-345-1518
FOR THE NAME OF YOUR NEAREST
COMPAQ AUTHORIZED RESELLER

intel inside pentium® PROCESSOR

*All prices shown are Compaq DirectPlus prices. Reseller prices may vary. Other models available; call for pricing. Offer available in the U.S. only. Call for lease prices. Leasing is provided for a term of 36 months and is subject to approved credit and certain terms and conditions. Call for details. **ProLinea 5 is covered by a Three Year Limited Warranty. Restrictions and exclusions apply. Monitors and certain options are covered by a One-Year Limited Warranty. Call for details. © 1996 Compaq Computer Corporation. All Rights Reserved. Compaq and the Compaq Logo Registered U.S. Patent and Trademark Office. ProLinea is a registered trademark and DirectPlus is a registered service mark of Compaq Computer Corporation. Products, prices and programs are subject to change without notice. Pentium and the Intel Inside logo are registered trademarks of Intel Corporation in the U.S. and other countries. Windows is a registered trademark of Microsoft Corporation. Other products are trademarks or registered trademarks of their respective companies.

Direct Mail Presorter Saves Money, Reduces Headaches

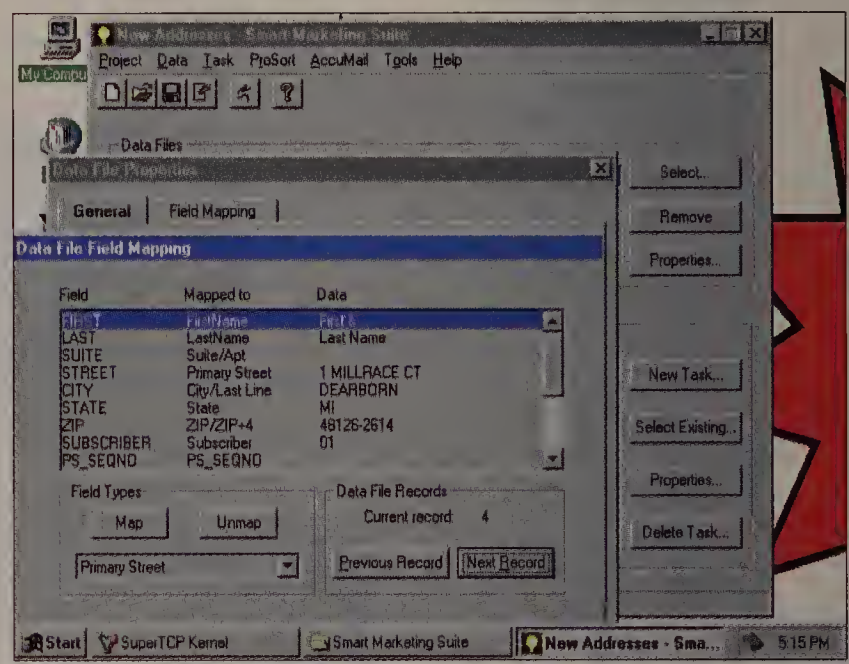
The U.S. Postal Service handles a stunning 500 million pieces of mail a day—most of it part of corporate direct-marketing campaigns. But even a well-financed campaign falls prey to incorrect addresses, a common problem since each year 7 million households change addresses, and third-class mail isn't always forwarded. We examined a beta copy of an effective solution for professional direct marketers, Smart Marketing Suite, a new Windows 95 package from Group 1 Software Inc.

Smart Marketing Suite isn't glamorous, but it does exactly what its name implies: It helps you check addresses for accuracy with a minimum of hassle, and it presorts large mailings efficiently. The software comprises two upgraded versions of existing Group 1 products: AccuMail 5.0 and ProSort 3.0. With AccuMail, users can standardize and edit U.S. addresses and validate zip codes against the U.S. Postal Service's national database, which is updated quarterly and made available on CD-ROM. ProSort is aimed at companies that use large mailing lists and want to take advantage of discounted postal rates for presorted mail. Your company should have mail campaigns big enough for the savings to justify Smart Marketing Suite's high price.

Smart Marketing Suite is a no-nonsense tool for a marketing department. If you aren't familiar with mailing-list software or postal codes, the suite's Help Wizard is especially useful because it walks you through the process.

The package does require familiarity with its setup; it is not intuitive enough to pass on to a temp. It works under Windows 3.*x* but shines in Windows 95, where the speed difference is noticeable.

—Ilan Greenberg



CHECK ADDRESSES AGAINST A U.S. POSTAL SERVICE DATABASE from within Smart Marketing Suite's AccuMail component.

Smart Marketing Suite

Cost-effective solution for presorting volume mailings.
List price: $1369
Group 1 Software Inc.
800/368-5806
Reader service no. 697

ProcessModel Animates Flowchart Simulation

If you still think new PCs and more RAM are all it takes to increase productivity and improve business operations, you're a prime candidate for ProcessModel 2.0, a 32-bit Windows 95–only flowchart simulation and modeling package from Promodel Corp.

An excellent choice for anyone interested in business-process reengineering, ProcessModel lets you easily create flowcharts of such common processes as assembly-line manufacturing, matching orders to customers, and replenishing stock items. You can then simulate the process to provide visual and quantitative proof of performance.

ProcessModel is actually an OLE 2.0 application that interfaces exclusively with Micrografx ABC FlowCharter. (Micrografx's ABC Graphics Suite for Windows 95 includes ABC FlowCharter and is bundled with ProcessModel.) ProcessModel adds its own menu and dialog boxes to ABC FlowCharter, and you use these to define variables and attributes, run simulations and scenarios, and view the results in spreadsheet and chart formats.

When testing a beta version, we found it easy to create a sample flowchart for a help desk and then run a simulation of 40 work hours. The results not only provided a scoreboard with performance stats but also revealed bottlenecks and other inefficiencies that helped us to streamline the process.

Unique to ProcessModel is its animation feature, which uses an on-screen simulation to help you visually analyze a process. Unlike Process Charter, Clear Process, and other simulation programs that just display blinking boxes, ProcessModel shows icons of people, paperwork, and other objects. A variable speed bar lets you control the pace of the moving objects, which is a real help when you want to explain how a complex process works.

If all you need is a simple flowchart package to create drawings, ProcessModel is overkill. But for business managers and planners ready to rethink their business procedures with an eye on increased efficiency and profitability, ProcessModel is a worthwhile buy.

—Richard Jantz

ProcessModel 2.0

Flowchart and modeling tool with animated simulations.
Promodel Corp.
801/223-4600
Street price: $695
Reader service no. 698

→ IT SHOULD LOOK BEAUTIFUL. OUR ENGINEERS HAVE SPENT THE LAST 28 YEARS POLISHING IT. ←

At Toyota, we know trust and confidence are things that must be built over time. That's why Toyota engineers have been perfecting Corolla for over 28 years now. In fact, despite overwhelming customer satisfaction, our engineers have continued to refine the Corolla. Including such advanced features as a liquid-filled engine mount. Side-door impact beams. Available integrated child safety seat.* And a 20-point engine management system that's almost like having a Toyota mechanic under the hood. That's probably why so many people consider the Corolla to be one of the most innovative, most trustworthy cars built in America.** All because our engineers can't leave well enough alone.

TOYOTA COROLLA
I Love What You Do For Me

Circle 237 on reader service card

Call 1-800-GO-TOYOTA or visit our Web Site at: http://www.toyota.com for a brochure and location of your nearest dealer.

©1996 Toyota Motor Sales, U.S.A., Inc. Buckle Up! Do it for those who love you. *Optional equipment on DX model only. **Most Corollas are built in America.

Make your presence

intel inside
pentium
PROCESSOR

elt back at the office.
HITACHI
MOBILIZED
COMPUTING
Circle 125 on reader service card

Web Resource for People With Disabilities

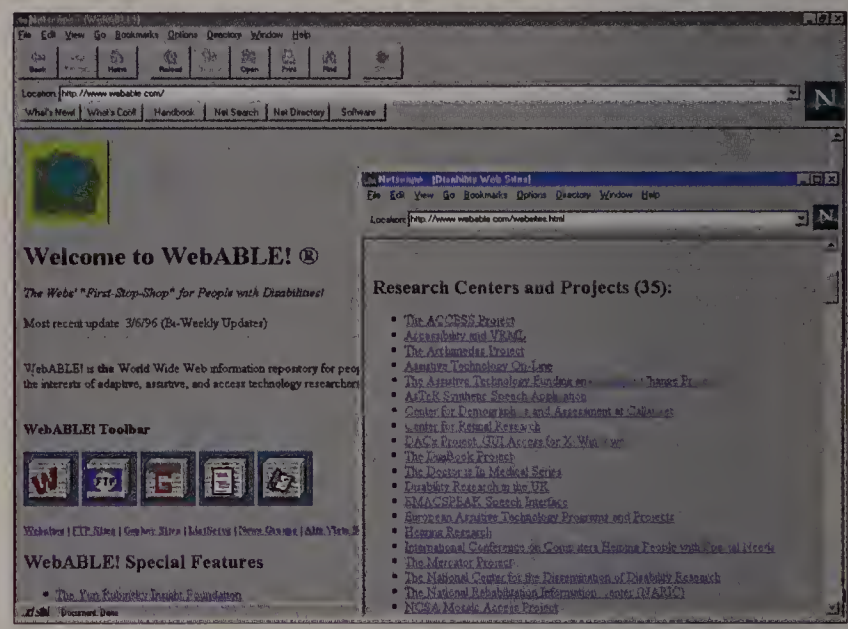
People who have visual or hearing impairments, or other physical or mental challenges, now have a place of their own on the World Wide Web. The WebAble site (http://www.webable.com) is also a helpful resource for families and colleagues. WebAble succeeds as a spot for basic information exchange but leaves you wishing for more details.

WebAble

Information and links for people with special needs; advice on Web page design.
WebAble Design Associates
http://www.webable.com
Pricing: Free

There's worthwhile original content on WebAble, though less than I expected. One useful section gives tips on designing Web pages to be more accessible to people who are blind or otherwise impaired visually. (An example: Include descriptions of icons, so text-to-speech conversion programs can make sense of a Web page.) The site also has information about hard-to-find manufacturers and distributors of assistive devices. But it delivers its greatest value as a compendium of links to related Web, FTP, and Gopher sites and Usenet newsgroups.

The list of sites is lengthy, though the descriptions are short. WebAble could add value by evaluating sites and noting which choices are the best.



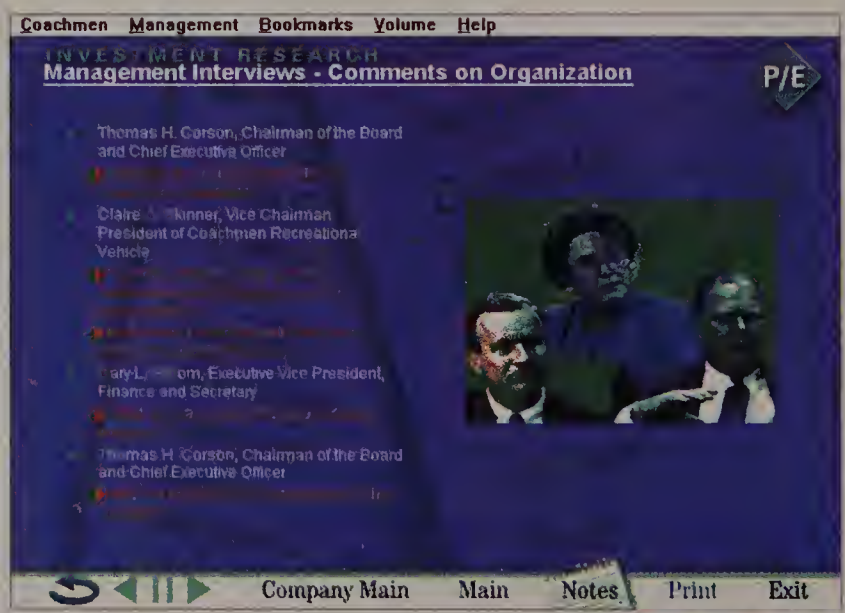
WEBABLE PROVIDES HELP for people with special needs, including information on products and links to relevant Web and Internet sites.

The site has a nice layout, but I was frustrated by repeated errors for internal links. Overall, however, this Web site serves an important need.

—Richard Morochove

Investing in This CD-ROM Could Pay Off

If you spend more than a couple of hours per week managing a personal investment portfolio, you can benefit from DecisionWare's P/E—Interactive Research for the Serious Investor, a serial publication on CD-ROM. This multimedia guide won't turn you into the next Warren Buffet, but it's worth the subscription, which costs $199 on the street and includes ten CD-ROMs per year. I reviewed the March 1996 disc, the company's first.



ASPIRING MILLIONAIRES CAN GET ADVICE from P/E—Interactive Research for the Serious Investor, a serial publication on CD-ROM.

Each CD-ROM includes in-depth reports on three publicly held companies. The reports feature video interviews with company management, a review of historical performance, financial statements, stock price charts, and commentary on future prospects. (The QuickTime video is good quality, shown in a quarter-screen window.) The companies discussed aren't the same big names covered repeatedly in the financial press. This product aims to help you uncover more unusual opportunities.

Another regular P/E component is a rotating panel of experts who discuss the domestic and international economic outlooks. I have just one complaint about the disc: It contains some typographical errors.

All work and no play makes you a dull investor; check out the disc's stock-trading game.

—Richard Morochove

P/E—Interactive Research for the Serious Investor

Ten CD-ROMs per year with in-depth investment advice.
DecisionWare
800/333-2900
http://www.decisionware.com
Street price: $199 a year for ten issues, $59 for three trial issues
Reader service no. 658

Hitachi Introduces

MOBILIZED COMPUTING.

Starting today, we invite you to make things happen from wherever it is you happen to be. To extend your reach so dramatically that previously inconvenient details-like time, space, the Pacific Ocean-are no longer a problem.

The means to this are the new Hitachi PC Series M and Series C Notebooks. Potent tools in your endless struggle to manage events and outcomes far from where you actually are.

Each embodies the Mobilized Computing™ concept. Meaning Hitachi Notebooks come ready to communicate via 28.8 Data/Fax modem over America Online®, CompuServe®, Prodigy®, Netscape Navigator™ and two-way fax.

Hitachi PC Series C Notebook.
Fully featured, optimized for communications. Available with 11.8" active matrix screen, Pentium® 120 MHz CPU. 5.3 lbs and 1.5" high, yet floppy drive is built in.

Hitachi PC Series M Notebook.
Optimized for multimedia presentations. 6x CD-ROM drive. LAN port. Available with 11.8" active matrix screen and Pentium® 133 MHz CPU.

Each is engineered on the premise that no intelligent person should waste his expensive time configuring modems or attending to other cyber-trivia. So, it's all mounted and ready to work at first startup. Built to standards exemplified by a five year warranty.

It's amazing the effect that a well-placed word from you can have.

The point of Mobilized Computing is to project those words to any point on the planet. Our apologies to any colleagues who thought that when you were away, you were away.

HITACHI
MOBILIZED
COMPUTING™

Remote Control!™

For information on your nearest dealer, call 1-800-Hitachi (448-2244) Website address www.HitachiPC.com

© 1996 Hitachi PC Corporation (USA) All rights reserved Mobilized Computing™ and Remote Control™ are trademarks of Hitachi PC Corporation (USA) which may be registered in some jurisdictions. The Intel Inside Logo and Pentium® are registered trademarks of Intel Corporation All other marks are owned by their respective companies

Circle 109 on reader service card

New Back-UPS® Pro™ PnP
itself the first time you use

Experts agree: Windows 95 and Windows NT Workstation demand APC protection

Plug & Play

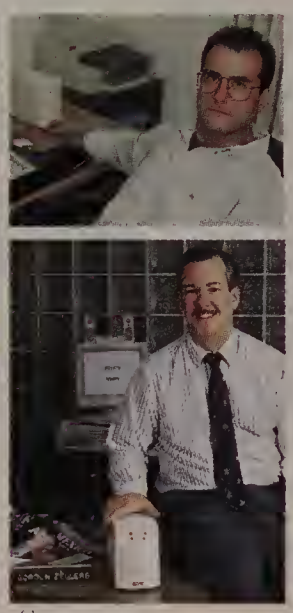
If you're using a computer, few things are more certain than power problems. If you haven't yet had a blackout, lost a hard drive, or toasted a modem, you will. It's almost a statistical certainty.

No surprise that *PCWeek* showed power problems such as blackouts, brownouts, and surges accounted for almost as much data loss as all other factors combined, or that a leading accounting firm attributed the largest single cause of computer downtime to—you guessed it—bad power.

MULTI-TASKING MULTIPLIES YOUR RISK OF *"THE BIG ONE"*

Multi-tasking operating systems like Windows 95 and Windows NT Workstation let you open and manipulate multiple files and applications at the same time. That's why, unfortunately, as *PC Magazine* says "When Windows 95 does crash, it's a horrible mess..."

Moreover, if you are "wired" to the Internet, an on-line service, or dialing into the office, you'll discover that phone lines are common paths for surges taking the express route direct to your motherboard.



Copyright 1995, APC. Trademarks are the property of their owners.

LIFETIME EQUIPMENT PROTECTION

$25,000

FOR AS LONG AS YOU OWN THIS PRODUCT, IF YOUR PROPERLY CONNECTED EQUIPMENT IS EVER DAMAGED BY AN AC SURGE, INCLUDING SURGES DUE TO LIGHTNING, APC WILL REPAIR OR REPLACE OUR PRODUCT AND UPTO $25,000 OF CONNECTED EQUIPMENT (SEE POLICY FOR DETAILS, VALID IN U.S. AND CANADA ONLY).

In short, if you still don't have proper protection (that $5 surge strip doesn't count) it's time to protect yourself before you kick yourself. Experts agree: If you choose not to decide on proper protection now, the next time you see this ad may be too late.

ROI IN THE BLINK OF AN EYE

More than 4,000,000 smart computer users protect against the inevitable with the affordable: award-winning power protection from APC, including the UPS that's winning praise the world over: the Plug n Play Back-UPS Pro. Ask them and they'll tell you: One prevented problem is all it takes to pay for proper power protection many times over.

BACK-UPS PRO PNP UPSS FEATURE:

- Instantaneous battery backup protects your data against a total loss of power.
- Automatic Voltage Regulation (AVR) provides the edge you need for full protection against extended brownouts or overvoltages without draining the battery.

MORE THAN 4,000,000 SATISFIED USERS SAY "PROTECT ME! WITH APC"

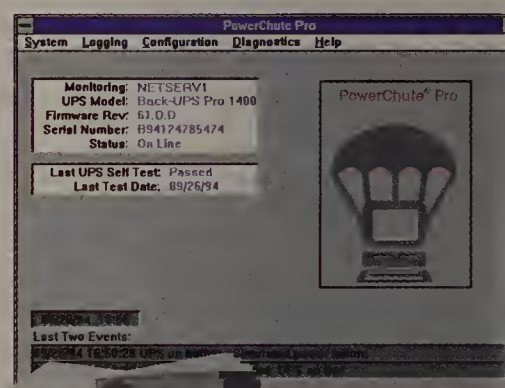
CLOCKWISE: " I'm an electrical engineer, and understand what's needed to protect a Pentium-class machine. I recommend these to everyone I know," says Jim Rawnick. "I especially like the Back-UPS Pro because it compensates for voltage irregularity without kicking over to battery."

"We've had great experience with APC," says Gordon Zellers. "The Back-UPS Pro has great features: it tells you if the battery is getting low, and they're user-replaceable with no hassle. As a small business, our computers and phones are vital to us. So is APC protection..."

"As a Fortune 500 company, we've used APC for at least 6 years," says Matt Lazar of Phelps-Dodge subsidiary Columbian Chemicals Co. "The new Back-UPS Pro PnP is easier to use than ever and is now our preferred UPS for our corporate PC's."

- CellGuard™ intelligent battery management dramatically extends battery life with fast recharge and dee discharge protection. Battery diagnos

FREE software



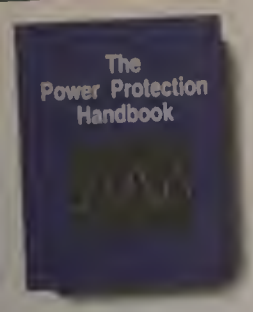
You get safe automatic shutdown, power even recording for power quality analysis, real-t UPS status, and certifi Win95 compatib for q and ea installa

Currently supports Windows, Windows 95, Windows NT, Windows for Workgroups and C

warn you before problems occur and batteries are quickly and safely user-replaceable without needing to shut y system down. (Batteries last 3-6 years under normal use).

- $25,000 lifetime repair/replace guarantee against surge damage to yo equipment (see details).
- Built-in phone line/10Base-T network cable surge protection for a bulletproof response to anything Mother Nature or Murpl Law sends in your direction.

So don't wait for the school of hi shocks to teach you an expensive les Ask for APC today.



Protect Your PC. FREE 60-page Power Protection Handbook

What are the myths and musts of PC protection? What are the 10 most common power protection mistakes? The top tips for adding reliability to your PC? Get your FREE copy and find out!

☐ **YES!** I'm interested in the first UPS designed for Windows 95. Please send my FREE handbook and Back-UPS Pro information.

Designed for Microsoft Windows 95

Name _____ Title: _____

Company _____

Street _____

City/State/Zip _____

Phone/Fax: _____

Brands of UPS used? _____

servers/PCs to be protected? _____

Dept. P3

NO POSTAGE
NECESSARY
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE

APC™
AMERICAN POWER CONVERSION

Dept. P3
132 Fairgrounds Road
P.O. Box 278
West Kingston, RI 02892-9920

pays for it

"...TO TAKE ADVANTAGE OF WINDOWS 95'S SYSTEM AGENT AND DRIVESPACE ULTRACOMPRESSION—GRACEFUL SHUTDOWN IN THE EVENT OF AN EXTENDED POWER OUTAGE HAS BECOME INCREASINGLY IMPORTANT. APC'S PLUG AND PLAY BACK-UPS PRO 280... IS ONE SLICK PACKAGE."
PC COMPUTING

"DON'T TAKE CHANCES. GET THE ULTIMATE PROTECTION... FROM APC." PCWORLD

Designed for Microsoft Windows 95

"ENSURE RELIABLE PERFORMANCE BY CHOOSING A UPS LICENSED TO BEAR THE DESIGNED FOR WINDOWS 95 LOGO..."
MICROSOFT

"★★★★...SHOULD BE STANDARD EQUIPMENT ON EVERY DESKTOP... EFFECTIVE, AFFORDABLE, DESIGNED TO LAST."
PC COMPUTING

"...R YOUR PC UP WITH THE RIGHT UPS, AND PNP WILL SAFEGUARD IT AGAINST SHORT OR LONG TERM POWER PROBLEMS."
WINDOWS MAGAZINE

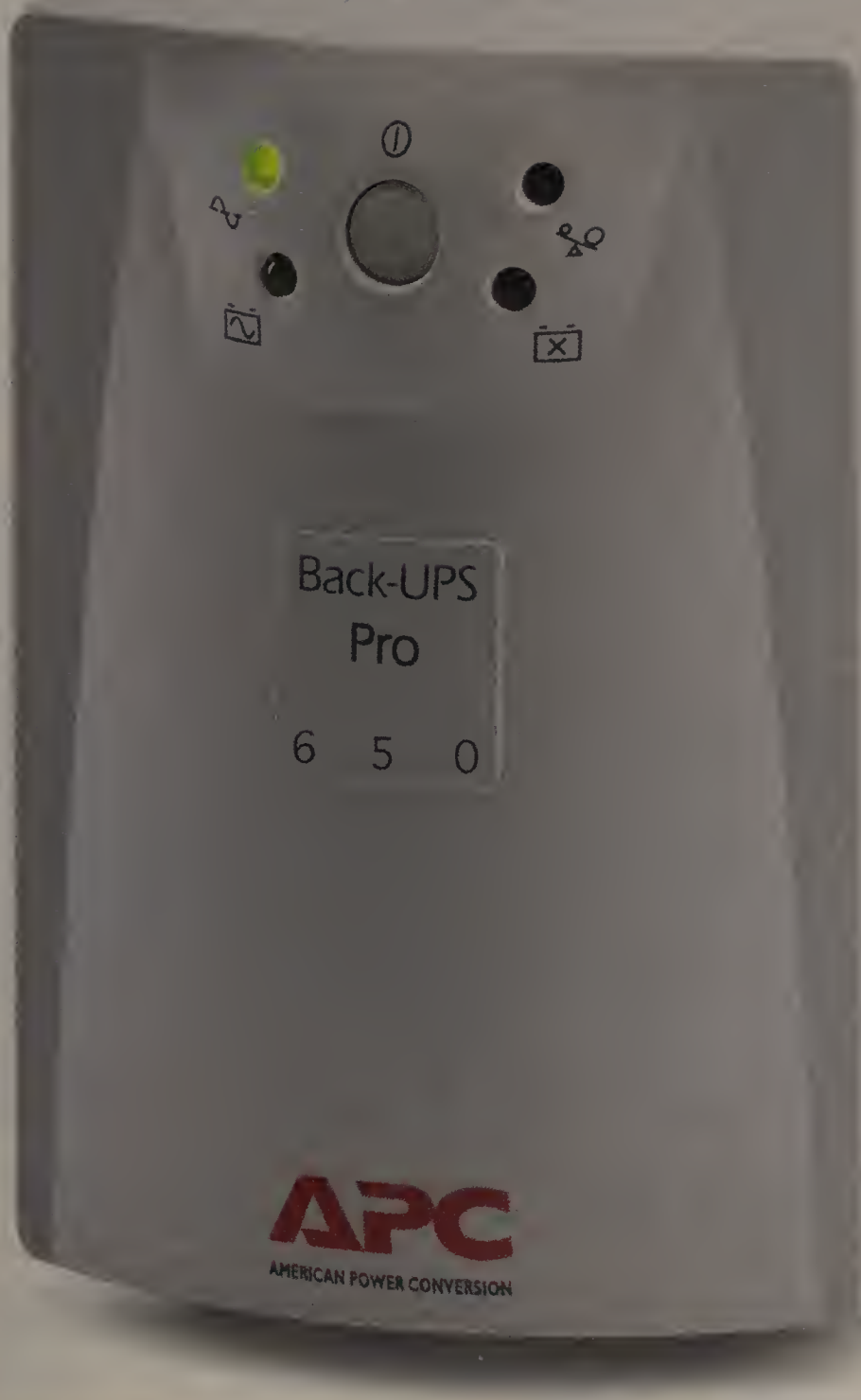
"APC'S BACK-UPS PRO SAVED THE DAY JUST AS EXPECTED."
WINDOWS SOURCES

"99 OUT OF 100"
COMPUTER GAMING WORLD

PC World 20 Best Upgrades

PC MAGAZINE UK EDITORS' CHOICE

WINDOWS MAGAZINE Reader's Choice



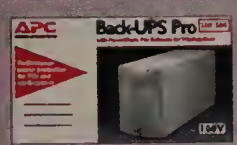
Available at:

COMPUSA THE COMPUTER SUPERSTORE

COMPUTER City

CHOOSING THE RIGHT APC PROTECTION

For **advanced PC protection** including automatic voltage-regulation, CellGuard battery management and phone line/10Base-T protection, choose the Back-UPS Pro. For longer runtime choose a higher VA rating. For **basic PC protection** choose from the Back-UPS family (software not included). For **file-server protection**, ask for our Smart-UPS line (not shown). For hardware-only **surge protection**, ask for APC's SurgeArrest line (not shown).



Back-UPS PRO

ADVANCED PC PROTECTION:
FOR PENTIUM, 486, WIN 95, AND BUSINESS APPLICATIONS

Volt-Amp Rating		List Price	Runtime*
280PNP	(Includes software)	$199	6 min
420PNP	(Includes software)	$339	8 min
650PNP	(Includes software)	$419	17 min
1000	(software not included)	$589	35 min
1400	(software not included)	$759	74 min

*Runtime shown is for typical Pentium desktop system and may vary with your actual load. Note: Back-UPS 200 not recommended for Pentium systems

Back-UPS

BASIC PC PROTECTION:
FOR 286, 386, ENTERTAINMENT, AND EDUCATION

Volt-Amp Rating		List Price	Runtime*
200	(software not included)	$119	-
280	(software not included)	$139	7 min
400	(software not included)	$199	13 min
450	(software not included)	$254	24 min
600	(software not included)	$359	31 min
900	(software not included)	$529	47 min
1250	(software not included)	$689	75 min

APC products have won more awards for excellence than all other brands combined. Call for a Free demo Disk and 60-page catalog, or visit our PowerPage™ at http://www.apcc.com

APC®

AMERICAN POWER CONVERSION

800-800-4APC

Dept P3

fax: 401-788-2797 / PowerFax™ 800-347-FAXX
CompuServe: GO APC SUPPORT
Internet: APCC@apcc.com
PowerPage™: http://www.apcc.com
132 Fairgrounds Rd., W. Kingston RI 02892 USA

Circle 45 on reader service card

cc:Mail 6.0 Adds Scheduling, Workflow Features

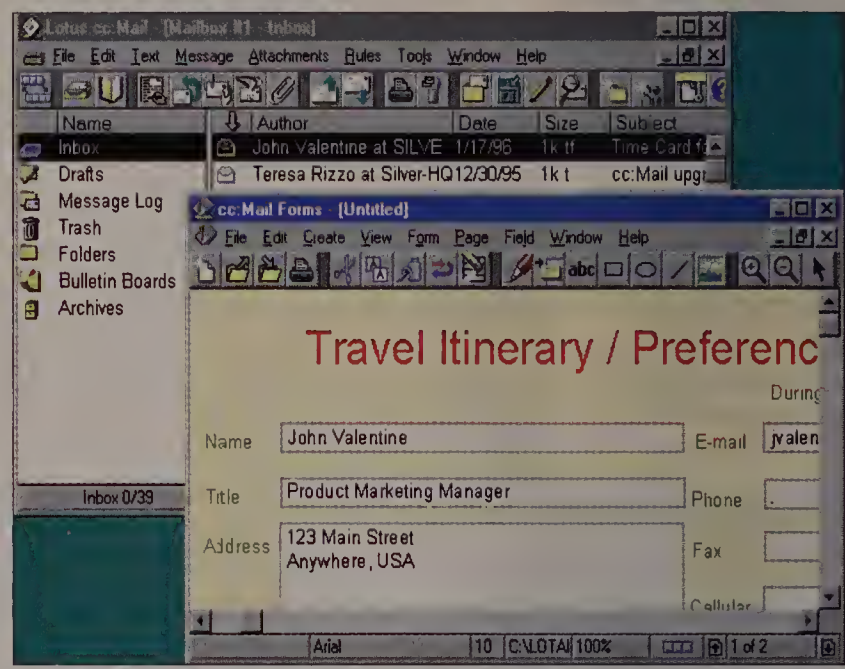
Lotus Development's cc:Mail has long been a favorite for transmitting the bits and bytes of corporate communications. But the e-mail program's lack of calendar capabilities, scheduling, and other workgroup features meant that businesses had to buy separate software to manage everyday tasks such as planning meetings. Wisely, Lotus has equipped cc:Mail release 6.0 to handle these jobs. This makes cc:Mail a stronger competitor to Novell GroupWise and Microsoft Mail (which offers calendaring through hooks to Schedule+, the group scheduler that comes in Microsoft Office 95). I reviewed a preproduction copy.

The new cc:Mail client software includes an integrated version of Organizer 2.1, Lotus's popular (but far from perfect) personal information manager. You can view colleagues' schedules and arrange meetings from within cc:Mail release 6.0; invited attendees are automatically notified of the proposed meeting's time, location, and subject.

Lotus has now given cc:Mail workflow capabilities. In addition, the program comes with a variety of ready-made form templates for expense reports, time cards, travel inquiries, and more. You route these forms via cc:Mail, just as you would an e-mail message. A form designer allows customization.

For network administrators, release 6.0 promises faster performance and a revamped database that performs maintenance chores in the background. According to Lotus, this means an end to periodic maintenance shutdowns, which are inconvenient for users.

One significant gripe: The beta software required about 20MB of space on my hard drive. Lotus says the shipping copy will require a bit less, and you can do a basic install in about 10.5MB (leaving out the forms and scheduler functions).



SCHEDULING AND FORMS features are integrated in cc:Mail 6.0. The customizable forms help with tasks such as travel requests.

Pricing was not set at press time, but cc:Mail 2.2 for Windows is $34 per user for 50 or more users; we expect cc:Mail release 6 to cost less, based on the company's recent aggressive pricing of Lotus Notes.

—Jeff Bertolucci

cc:Mail Release 6.0

Popular e-mail package adds scheduling, forms and workflow features.
Lotus Development Corp.
800/343-5414, 617/577-8500
List price: Not set at press time
Reader service no. 644

Instant Internet Gratification

Performance Technology's Instant Internet 3.0 can save plenty of time and trouble when you're connecting a small to midsize local area network to the Internet. This hardware/software package is easy to install because it bundles everything you need and comes preconfigured for hundreds of Internet service providers. List prices start at $3495 and rise to $5095, depending on how you connect to the Internet (modem connections are least expensive, ISDN connections are at the high end.) We tested a shipping version.

Instant Internet 3.0 is essentially an Internet gateway-in-a-box, with network interfaces and Internet software built in. You can connect to the Internet through a modem, ISDN line, or a router to an ISP. The product attaches to ethernet or token ring LANs running NetWare or Performance Technology's peer-to-peer software.

We linked our NetWare 3.12 ethernet LAN to the Internet using Instant Internet's optional internal 28.8-kbps modem. This is real plug and play: Connect the modem to a phone line, connect the LAN card to the LAN, and flip a switch. It's easy to configure the network software—just select your ISP and enter the access number, customer ID, and password. Instant Internet includes administrative programs for managing Internet access, and three applications for networked users: Eudora for e-mail, WinVN for Usenet news lists, and WinWeb, an unremarkable World Wide Web browser. But you can use any Winsock-compatible Internet application. We used Netscape's Navigator 2.0, running under Windows 3.11, with no problems.

—Pete Loshin

Instant Internet 3.0

Internet access in minutes for your small LAN.
Performance Technology Inc.
800/784-4638
List price: $3495 to $5095
Reader service no. 645

Ideas won't wait...

Capture your inspirations in a flash with Imagineer™

INTERGRAPH Imagineer™ Technical

Why spend time wrestling with your software? Intergraph Imagineer™ Technical makes drawing fast and easy. Instead of complex commands, you get intuitive on-screen feedback. Imagineer's new way of drawing reduces mouse clicks, command changes, and keystrokes – so you stay in tune with your creative impulses.

Designed for Windows® 95 and Windows NT™

Imagineer is a Microsoft® Office Compatible 95 product. Combine drawings with text files, spreadsheets, presentations, and more.

Imagineer works with AutoCAD and MicroStation® files *– no messy translation necessary!*

Call for a **FREE** evaluation CD! Visit our Web site at http://www.intergraph.com

Precision drawing made easy!

Only $495 – call and order today!

800-692-8069

Mention priority code R06.

Circle 106 on reader service card

Microsoft® OFFICE Compatible

Designed for Microsoft® Windows® 95

INTERGRAPH SOFTWARE SOLUTIONS

Intergraph and the Intergraph logo are registered trademarks and Imagineer is a trademark of Intergraph Corporation. Microsoft, Windows, and the Windows logos are registered trademarks and Windows NT is a trademark of Microsoft Corporation. MicroStation is a registered trademark of Bentley Systems, Inc. Other brands and product names are trademarks of their respective owners. Copyright 1996 Intergraph Corporation, Huntsville, AL 35894-0001. Printed in USA

SimpleJack Learns a New PC Card Trick

Simple Technology's 28.8 Communicator PC card fax-modem beats the competition for one reason: the collapsible SimpleJack RJ-11 connector. To use the modem, just flick open the top of the connector with your fingertip, and slide in a phone cord the same way you'd plug a cord into the back of your home phone. When you're not using the modem, remove the cord and press the snap-down lid so it's flush with the rest of the PC card. No fuss, no muss. I tested a shipping version.

Other companies have tried similar approaches, but with less success. The first company to integrate an analog phone connector into a PC card was Megahertz. Its spring-loaded X-Jack connector, which pops out at the touch of a finger, is an elegant design with one main drawback—break the connector, and you've broken the modem. Angia Communications took another tack. Angia's sturdy SafeJack connector has two RJ-11 jacks and plugs into an external port on the PC card; the external connector is an extra part to worry about losing. After using the Simple Technology 28.8 Communicator with the SimpleJack connector, I decided that it combines the best attributes of each alternative. Also, Simple Technology's approach lets the phone cord lie flat on top of your work surface.

BUILDING A BETTER PC CARD MODEM: The 28.8 Communicator deserves praise for its SimpleJack Connector.

If your notebook has a single Type II PC card slot, or if the second connector in a Type III slot is in use, you won't have room to pop up the SimpleJack connector. In this case, you can slide out the connector and plug it into the external port on the edge of the 28.8 Communicator card. A second external port lets you connect a cellular phone to pick up e-mail or send a fax (to connect the phone, you need an optional $39 cable). If your notebook has integrated sound capability, you can use the 28.8 Communicator to turn the computer into an answering machine.

Despite a somewhat high street price of $279, the 28.8 Communicator rates a second look by the savvy traveler.

—Susan Silvius

28.8 Communicator With SimpleJack

PC Card fax-modem with smart new connector.
Simple Technology
800/367-7330
Street price: $279
Reader service no. 646

AirCommunicator Lite: Cellular Phone Faxes, Too

At nearly three-quarters of a pound, the AirCommunicator may not seem "lite" for a cellular flip-phone—but consider the features crammed into its 1.9-by-1.1-by-5.7-inch case. This $550 phone doubles as a 14.4-kbps fax-modem, so you can send and receive faxes. It holds frequently used data—such as order forms—to be faxed on demand. It stores voice mail messages of up to 3 minutes. It lets you send and receive e-mail, dial in to corporate LANs, even log on to online services. Alas, it does not wash the dishes.

The AirCommunicator Lite's two-line LCD display is used for phone numbers and user programming. (E-mail messages and faxes are sent to your computer screen; the phone holds only the data.) On the shipping model I tested, calls always sounded sharp. But sending and receiving faxes required patience on occasion. I couldn't send a fax to the AirCommunicator from my PC using WinFax Pro 4.0, even after calling Air Communications' tech support and adjusting WinFax settings. But I received faxes from fax machines, and from others who used WinFax, without a hitch. Transmission speed varies: For me, it ranged from a slow 4800 bps when sending from a downtown San Francisco office to more than 14.4 kbps from the Golden Gate Bridge. To view a fax, you connect the phone to your computer's serial port with an included cable, or forward the fax to a nearby fax machine by dialing its number.

You access your voice mail by using the keypad, as you would on a regular phone. Customizable speed dialing is built in.

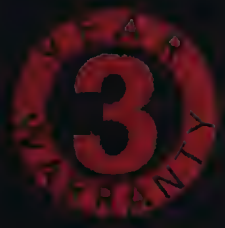
On the downside, the nickel cadmium battery is weak: It's good for 30 to 60 minutes of talk or transmissions, or 7 hours in standby mode. AirCommunicator Lite's versatility makes it easy to recommend. But it's wise to buy the optional $42.95 DC auto adapter cable, or the $139.95 desktop charger for rapid battery recharge. Lithium ion batteries, good for 2 hours, sell for about $100.

—Michael S. Lasky

AirCommunicator Lite

Cellular flip-phone integrates 14.4-kbps fax-modem, voice mail system, and more.
Air Communications
800/247-3282
Street price: $550
Reader service no. 647

DELL DIMENSION
Reliable PCs For High Performance Computing



DELL® DIMENSION™ XPS Pro200n
200MHz PENTIUM® PRO PROCESSOR

- Mini Tower Model
- ★ **32MB EDO Memory**
- 256KB Internal L2 Cache
- ★ **2.5GB Hard Drive [10.5ms]**
- ★ **17LS Monitor (15.7" v.i.s.)**
- 9FX Motion Graphics Accelerator with 2MB VRAM
- ★ **8X Multi-session EIDE CD-ROM Drive**
- MS® Office Professional with Bookshelf for Windows® 95 (N.F.I.)
- Microsoft® Windows NT™/30 Days Free Support/MS Mouse
- ★ **3 Year Limited Warranty†**
- ★ ***Upgrade to 1 Year of Windows NT support for only $149 more.***

Business Lease◊: $130/Mo.
Order Code #500257

The New
200MHz Dell Dimension
XPS Pro200n

$3599

"...THE PENTIUM PRO LEAVES THE PENTIUM IN THE DUST."

–PC Computing, 3/96

magnified 25x

Notice there's no asterisk to qualify that statement.

No ifs, ands, or buts. Just pure, unbridled speed. Period. That's the Dell Dimension XPS Pro200n. The breathtakingly fast machine that prompted *PC Computing* to reach for oxygen as they remarked, "...it's the fastest Intel-based system we've ever seen—hands down." And in comparing the performance of this Pentium Pro to that of the Pentium, they said, "...exceptional—more than double that of the 133MHz Pentium."

If you're a 32-bit power user, give us a call. We'll set you up with what they're calling the ultimate Pentium Pro system. You know, the one with no asterisks.

DELL®

TO ORDER, CALL

800-685-9224

In Canada★ call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/

Keycode #03136

Dell's featured computer artist is Marco Marinucci of San Francisco, CA.

PC Computing, March 1996 article reprinted with permission of *PC Computing*. ©Ziff-Davis Publishing Company †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., 2214 W. Braker Lane, Suite D, Austin, TX 78758. ◊Business leasing arranged by Leasing Group, Inc. ★Prices and specifications valid in the U.S. only and subject to change without notice. The Intel Inside logo and Pentium are registered trademarks and the Pentium Pro Processor logo is a trademark of Intel Corporation. MS, Microsoft, Windows and the Windows NT logo are registered trademarks and Windows NT is a trademark of Microsoft Corporation. ©1996 Dell Computer Corporation. All rights reserved.

New Twist In Graphics

You don't need artistic expertise to use Fractal Design's **Poser 2.0** but you'll have a head start if you recall what it was like to twist and turn a Barbie doll or G.I. Joe toy. This ingenious 3-D graphics program for Windows 95 provides drawings of human figures that you mold into any pose simply by grabbing hold of them with the mouse pointer. We tested a preproduction version. Poser lets you give these malleable mannequins a range of physiques, apply interesting textures, and render them as bitmapped images to import into paint packages, presentation programs, and other applications (these are still pictures only; it's not an animation program). Like Fractal Design's Painter image editor, Poser 2.0 is a useful tool for graphics pros—and a wonderful toy for amateur artists. It lists for $199. Fractal Design, 800/297-2665.

Reader service no. 648

STRIKE A POSE: Fractal Design's Poser 2.0 lets you mold three-dimensional human figures by pointing and clicking.

Show Presentations on TV

Showing your multimedia presentation on the small screen of a notebook PC is like serving a gourmet dinner on paper plates: Your effort doesn't quite translate. Umax Technologies' **Maxmedia TV/Pro II** lets you display your presentation on any television. We used a shipping unit of this external scan converter, which hooks up easily between a notebook PC's external monitor port and a TV set. The $399.95 unit includes an aerodynamic-looking converter box, a remote controller, and the necessary cables for connecting to a TV or VCR. The Maxmedia TV/Pro II handles VGA input (up to 800 by 600 resolution), converting to the composite video on your television screen. It works with NTSC and PAL systems. The remote control lets you zoom in on images, freeze frames, and adjust picture size. Umax Technologies, 800/562-0311.

Reader service no. 649

RUN PRESENTATIONS ON TV using Umax Technologies' Maxmedia TV/Pro II. This converter works easily with your notebook PC.

A Smart Utility

Windows 95's Explorer may work a lot better than Windows 3.1's File Manager, but it still doesn't handle file compression. That's just one of the tasks that **Drag And File Gold for Windows 95/NT** can take care of, with built-in PKZip-compatible archival tools. We tested a shipping copy. Experienced computer users will also appreciate the drive windows that let you quickly find, select, tag, and manage files. With the program's multiple windows, you can copy, delete, move, or archive files from different folders. A multiassociate feature lets a file be opened from various programs. The software does have one quirk: Whenever you open the drive on which you installed Drag And File—say your C: drive—the program selects its own directory as the default. Available as shareware from Canyon's World Wide Web site (http://www.canyonsw.com), the program has a $55 registration fee. Canyon Software, 800/280-3691.

Reader service no. 650

Decision Support

Need help making a complicated business decision? Expert Choice has released a new version of its decision support software for Windows 3.*x* and Win 95. **Expert Choice 9.0** uses the Analytic Hierarchy Process, a method developed at the Wharton School of Business, to help you make organized decisions. You might use the product when considering such problems as resource allocation, total quality management projects, or mergers and acquisitions. A new module automatically diagrams the relevant decision factors. The single-user version of Expert Choice 9.0 sells for $595; students and educational institutions pay $70. You can download a free trial version from the Internet (http://ahp.net/ www/ahp/). Expert Choice, 412/682-3844, 412/682-7008 (fax).

Reader service no. 651

Improved Flowcharting

Among the flowcharting packages for Windows 95, you'll find an affordable 32-bit version from a veteran in this field, Patton & Patton Software. We saw a preproduction version of **Flow Charting PDQ,** which handles simple flowcharts, organizational charts, and network diagrams, incorporating predesigned or custom chart shapes. Using new hyperlinks, you can also quickly attach notes and subcharts to a diagram. New chart-editing tools

How Affordable *Is* The Practical ProClass LCD Modem With Text Display?

At $359* What a Value!

Think of it as a 747 for the Price of a Piper Cub

The ProClass™ LCD modem features transmission speeds up to 230,400 bps, and a large LCD text display that provides more than 50 status messages. Plus, easy-to-use menu buttons and 10 LEDs that provide real-time transmission status. The ProClass LCD is backed by 7 day technical support and a lifetime limited warranty. What a value! For more information, call us at 800-964-2937, ext. 260 or use PRACTIFAX at 800-225-4774 and select Document 3075.

PRACTICAL PERIPHERALS®

ProClass 288 EZ-Port™ Up to 230K bps throughput. EZ-Port pop-out telephone connector. Uses 90% less battery power than other modems. Compatible with all major PCMCIA notebook computers. Flash memory supports easy upgrades. 5 year limited warranty.

PM288MT II V.34 Feature-rich, high performance modem that meets the needs of high volume datacom users on a tight budget. Transmit data at 28.8 bps. Fax at 14.4 bps. Eight LEDs for real-time connection information. V.34 compatible. Lifetime limited warranty. Extremely low price.

© 1996 Practical Peripherals. Phone: 770-840-9966. Fax: 770-734-4601. BBS: 770-734-4600. E-mail: support@practinet.com. Web Site: http://www.practinet.com. Practical, the Practical Peripherals logo, ProClass, and EZ-Port are trademarks of Practical Peripherals. *Estimated street price-your price may vary.

Circle 191 on reader service card

help make revising PDQ's diagrams easy. Flow Charting PDQ has a street price of $125; a five-user LAN version costs $500. Patton & Patton Software, 800/525-0082.

Reader service no. 652

Ride the Wave

After making made a splash with its GlidePoint trackpad input device, Cirque has incorporated it into the ergonomic split-design **GlidePoint WaveKeyboard**. We tested a shipping version. The keyboard's wavy shape might slow you down at first, but you'll soon feel the benefit of its design. The small trackpad at the bottom corner on the right side lets you use your fingers to move the cursor around the screen, and you tap the pad to select. Smart keys for Windows 95, such as a Start key, and specific key combinations for common commands like Minimize All Windows are helpful for people who spend a lot of time with Windows 95. The GlidePoint WaveKeyboard lists at $129; the company expects a street price of $99. Cirque, 800/454-3375.

Reader service no. 653

CRAVE THE WAVE: Cirque's comfortable, ergonomic GlidePoint WaveKeyboard has a built-in trackpad.

SCSI Gets Faster

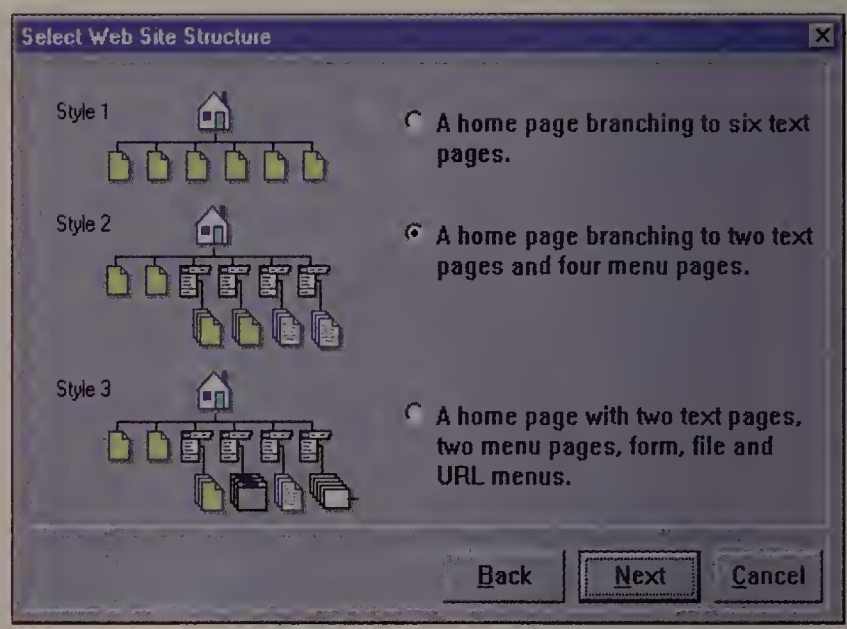
The Ultra-SCSI interface sounds quick, and it is: twice as fast as SCSI-2, with a transfer rate for new Ultra-SCSI hard drives that tops out at 20MB per second. But before your PC can pump data at this rate, it needs an Ultra-SCSI interface card. Enter the **FlashPoint LT PCI** Ultra-SCSI host adapter, which provides high-end features at a reasonable $229 list price. This bus-mastering card can handle most of the read/write processing, freeing the system CPU for other work. Based on the preproduction version we tested, the setup utility and online help are easy to use. You can even hook up a mixture of SCSI-1, SCSI-2, and Ultra-SCSI devices (such as hard drives or scanners) to the same adapter. BusLogic also sells a dual-channel card that supports up to 14 devices. BusLogic, 800/707-7274, 408/492-9090.

Reader service no. 654

Web Page Creator

With DeltaPoint's **QuickSite** program, Web site design and maintenance become manageable. This wizard-driven program creates a Web site structure quickly, including a home page with a table of contents, index and menu pages, hot links, and buttons. The site's structure is saved in a standard .dbf format. QuickSite is almost perfect, but it lacks a posting facility for uploading the files to your Internet service provider. Also, it tends to launch multiple instances of your Web browser when you view an HTML page. You can download a free trial version (http://www.deltapoint.com/). List price is $99.95 DeltaPoint, 408/648-4000.

Reader service no. 655



DESIGN WEB PAGES IN MINUTES with DeltaPoint's QuickSite. Wizards skillfully guide you through the process.

New Upgrade for 486s

Looking for an alternative to Intel's Pentium OverDrive for 486? Evergreen Technologies says its **Evergreen 586** upgrade delivers Pentium-75–level performance. Based on a Cyrix 5x86 chip, it plugs into a 486 CPU socket or an OverDrive socket. The $199 Evergreen 586/100 runs at 100 MHz when you upgrade a 486-33, 486-50, or 486-66 system. A $229 version runs at 100 MHz when you upgrade a 486-25 system, or at 80 MHz in a 486-20. The $269 Evergreen 586/133 runs at 133 MHz when you upgrade a 486-33 or 486-66. We did not test the chips. Evergreen Technologies, 541/757-0934, http://www.evertech.com.

Reader service no. 656

A Low-Cost Upgrade

Kingston processor upgrades cost less than Evergreen chips (see above). The company says that its $139 **TurboChip 133** can boost most 486SX, 486SX2, 486DX, or 486DX2 PCs to Pentium-75–level performance. TurboChip 133, which is based on AMD's Am5x86-P75 microprocessor, runs at 133 MHz when you upgrade a 486SX-33 or 486DX2-66, and at 100 MHz with a 486SX-25 or 486DX2-50. Kingston Technology, 800/337-8410, http://www.kingston.com.

Reader service no. 657

For more information about any product, contact the manufacturer or circle the number on the reader service card.

Guess Who Just Got A Quantex

Quantex Makes A

Once he got his Quantex, this Beefeater knew that his days as a member of the Royal Guard were numbered. Whenever he'd think about his Quantex, he couldn't help but smile. After all, he'd just made one of the smartest buys since computers were invented. And it wasn't just the price, but the features and technology, too. Dollar for dollar, feature for feature, Quantex can't be beat. So after decades of spurning tourists trying to twist his mouth into a grin, his stony visage has fallen. If only he'd bought another brand, he'd have kept that unflappable frown.

Sorry, old chap.

New Tech Support Hours!

9 a.m. to 12 a.m. M-F, and from 9 a.m. to 6 p.m. weekends (ET).

WINDOWS MAGAZINE 1996 RECOMMENDED

"The QP5/150 SM-2 is a brute that will keep the competition on its toes" (May '96).

COMPUTER SHOPPER

"The most compelling configuration for its price remains the Quantex QP5/166 SM-2" (March '96).

1996 EDITORS' CHOICE HOMEPC TOP 100 HARDWARE

"If it's speed you're after, this QP5/100 M-4 Pentium trounces the competition" (April '96).

Newsweek

Special Edition "Computers & the Family" recognized the QP5/75 as one of the "14 Best PCs For the Long Haul."

World Of Difference

Designed for Microsoft Windows 95

IF YOU CAN IMAGINE IT, YOU CAN DO IT WITH A QUANTEX PC.

Establish the original Buckingham Palace Guard Fan Club on the Internet (if that's your cup of tea). Or start a home-based business that'll pad your wallet as you're padding around in your socks. Visit the galleries of Soho, London or SoHo NYC. Connect kids with multimedia "edutainment" and expand their horizons.

Quantex PCs link you to resources, people, places, ideas, and information. So you can do more with your PC than ever before. Most importantly, we've aggressively priced these systems to be accessible to your budget. So when you're done playing the stock market, you can afford to lock the door and play your favorite video game (we won't tell.)

AWARD-WINNING SYSTEMS ARE OUR ADVANTAGE.

Our top quality, technologically advanced, and competitively priced systems are the most rewarding purchases on the market. From family multimedia to Pentium® Pro microprocessor workstations, these feature-packed PCs are ready to go right out of the box. It's easy to see that your total satisfaction is Quantex's number one priority. You'll notice it in our people, in conveniences like our Internet Home Page, and, of course, in our award-winning systems.

JUDGE US BY THE COMPANY WE KEEP.

We only work with products you know and trust bearing the best names in the business. Like **Intel, Microsoft, Novell, Diamond Multimedia, Sony, Western Digital, MAG Innovision, Altec Lansing Multimedia, Ensoniq, Toshiba, and STB.**

With industry-renowned, 100% Certified Novell NetWare Compatible components like these, you're guaranteed top-flight performance and maximum reliability. When it comes to quality, Quantex won't settle for less!

PENTIUM PRO PROCESSORS AWAKEN THE PERFORMANCE ANIMAL IN ALL OF US.

Finally, full power without compromise. Our QP6/WS line incorporates Intel's Pentium Pro processor with the new Intel Orion Chip Set, SCSI hardware, vast storage capacity, and Windows NT. The result is one of the fastest, most reliable workstations on the market.

OUR CUSTOMER SUPPORT STAFF NOW WORKS 93 HOURS A WEEK. HOW'S THAT FOR COMMITMENT?

Inspired by chart-topping reliability ratings, high customer satisfaction, faster response times (and plenty of caffeine), we came up with a revolutionary idea: rather than conventional customer support, why not *extended* support? Now, not only are these systems backed by a 30-Day Money Back Guarantee, a One Year Limited Express Parts Replacement, One Year Free On-Site Service,* and Lifetime Toll-Free Technical Support–we've extended the warranty period on our new QP6/WS line to a full three years! While we were at it, we extended our Tech Support hours, from 9 a.m. to 12 a.m. M-F, and from 9 a.m. to 6 p.m. all weekend long (ET). We even add the option of extending the protection of your PC for up to 4 years under the GE Service Protection Plan. Just think of it as our way of extending a handshake to you for buying our system. *(All sales are subject to Quantex's standard limited warranties and terms and conditions of sale. Copies of the limited warranties may be obtained by calling Quantex.)*

intel inside pentium® PROCESSOR

New sales hours! 9 a.m. to 12 a.m. Monday through Friday, and 9 a.m. to 6 p.m. on Saturday (ET)!

PCComputing

"The QP5/150 SM-2's overall performance was higher than that of all 150MHz systems, and it nearly kept pace with the 166MHz Pentium systems" (March '96).

MULTIMEDIA WORLD

"Every part of the setup is made simple by a superb quick-setup guide, an easy open case, and clearly labeled cables" (March '96).

QUANTEX

1-800-836-0566

www.quantex.com

Call For The Quantex That's

Above system features QP5/SM-1

QP5/133 M-2 $1799

- Intel 133MHz Pentium processor
- Intel 430VX PCI set
- 16MB EDO Performance-Enhanced Memory
- 256KB Pipelined Burst Cache
- 1.2GB 9ms EIDE Mode 4 Hard Drive
- 3.5" 1.44MB Floppy Drive
- STB 64-Bit PCI Accelerator w/2MB
- 15" MAG Digital 1280x1024 Monitor
- 28.8 Fax/Modem w/Voice Mail & Speakerphone
- Toshiba 6X 175ms EIDE CD-ROM Drive
- Ensoniq 16-Bit Wavetable Sound Card
- Digitally Controller Stereo Speakers
- Mini-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Windows 95 with Microsoft Plus!
- Family Software Bundle (preinstalled)
- Upgrade STB Powergraph 64 3-D VGA $call

QP5/100 M-2.....$1699
QP5/120 M-2.....$1749
QP5/150 M-2.....$1899
QP5/166 M-2.....$2049

QP5/133 SM $1999

- Intel 133MHz Pentium® processor
- Intel 430HX PCI set
- 16MB EDO Performance-Enhanced Memory
- 512KB Pipelined Burst Cache
- 1.6GB 9ms EIDE Mode 4 Hard Drive
- 3.5" 1.44MB Floppy Drive
- STB PowerGraph 64 Video w/ 2MB EDO RAM (MPEG Playback Ready)
- 15" MAG Digital 1280x1024 Monitor
- 28.8 Fax/Modem w/Voice Mail & Speakerphone
- Toshiba 6X 175ms EIDE CD-ROM Drive
- Ensoniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-5 Speakers
- Mid-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Windows 95 with Microsoft Plus!
- Professional Software Bundle (preinstalled)
- Upgrade to Lightspeed 128-Bit VGA for $99 more
- Upgrade STB Powergraph 64 3-D VGA $call

QP5/120 SM.....$1949
QP5/150 SM.....$2099
QP5/166 SM.....$2249

QP5/150 SM-1 $2399

- Intel 150MHz Pentium processor
- Intel 430HX PCI set
- 16MB EDO Performance-Enhanced Memory
- 512KB Pipelined Burst Cache
- 2GB EIDE Mode 4 Hard Drive
- 3.5" 1.44MB Floppy Drive
- STB PowerGraph 64 Video w/2MB EDO RAM (MPEG Playback Ready)
- 17" .26dp MAG 1280x1024 Monitor
- 28.8 Fax/Modem w/Voice Mail & Speakerphone
- Toshiba 8X EIDE 145ms CD-ROM Drive
- Ensoniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-5 Speakers
- Mid-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Windows 95 with Microsoft Plus!
- Professional Software Bundle (preinstalled)
- Upgrade to Lightspeed 128-Bit VGA for $99 more
- Upgrade STB Powergraph 64 3-D VGA $call

QP5/120 SM-1.....$2249
QP5/133 SM-1.....$2299
QP5/166 SM-1.....$2549

QP5/166 SM-2 $2849

- Intel 166MHz Pentium processor
- Intel 430HX PCI set
- 16MB EDO Performance-Enhanced memory
- 512KB Pipelined Burst Cache
- 2.5GB EIDE Mode 4 Hard Drive
- 3.5" 1.44MB Floppy Drive
- Diamond Stealth64 PCI Video w/2MB VRAM
- 17" .25dp MAG Technitron Monitor (Based on Advanced Sony Trinitron CRT)
- 28.8 Fax/Modem w/Voice Mail & Speakerphone
- Toshiba 8X EIDE 145ms CD-ROM Drive
- Ensoniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-31 Speakers w/ subwoofer
- Mid-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Windows 95 with Microsoft Plus!
- Professional Software Bundle (preinstalled)

QP5/120 SM-2.....$2549
QP5/133 SM-2.....$2599
QP5/150 SM-2.....$2699

Designed for Microsoft Windows 95

intel inside pentium® PROCESSOR

*denotes 3-Year Limited Warranty only applies to the QP6/200 WS-2 workstation. CD Titles are subject to change and cannot be substituted. * On-Site Service may not be available in certain remote areas, and is only available if determined necessary by a technician. All returned items must have a Return Merchandise Authorization (RMA) number and must be in original packaging. The cost for returned freight is not included with any Money-Back Guarantees; shipping charges are non-refundable. Prices and product descriptions subject to change without notice. Quantex Microsystems cannot be responsible for errors in typography or photography. "Pentium and the Intel Inside logo are registered trademark of Intel Corporation". Microsoft and Windows 95 are registered trademarks and Windows NT is a trademark of Microsoft Corporation. Some of the names or trademarks shown herein may be the property of other companies. Quantex Microsystems, Inc. 1996. All Rights Reserved.

Right For You

QP5/150 M-3 $2099

- Intel 150MHz Pentium processor
- Intel 430VX PCI set
- 16MB EDO Performance-Enhanced Memory
- 512KB Pipelined Burst Cache
- 1.6GB EIDE Mode 4 Hard Drive
- 3.5" 1.44MB Floppy Drive
- STB PowerGraph 64 Video w/ 2MB EDO RAM (MPEG Playback Ready)
- 15"MAG Digital 1280x1024 Monitor
- 28.8 Fax/Modem w/Voice Mail & Speakerphone
- Toshiba 8X EIDE 145ms CD-ROM Drive
- Ensoniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-5 Speakers
- Mini-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Windows 95 with Microsoft Plus!
- Family Software Bundle (preinstalled)
- Upgrade STB Powergraph 64 3-D VGA $call

QP5/100 M-3.....$1899
QP5/120 M-3.....$1949
QP5/133 M-3.....$1999
QP5/166 M-3.....$2249

QP5/166 M-4 $2599

- Intel 166MHz Pentium processor
- Intel 430VX PCI set
- 16MB EDO Performance-Enhanced Memory
- 512KB Pipelined Burst Cache
- 2.0GB EIDE Mode 4 Hard Drive
- 3.5" 1.44MB Floppy Drive
- STB PowerGraph 64 Video w/ 2MB EDO RAM (MPEG Playback Ready)
- 17" .26dp MAG 1280x1024 Monitor
- 28.8 Fax/Modem w/Voice Mail & Speakerphone
- Toshiba 8X EIDE 145ms CD-ROM Drive
- Ensoniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-31 Speakers w/Subwoofer
- Mini-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Windows 95 with Microsoft Plus!
- Family Software Bundle (preinstalled)
- Upgrade to Lightspeed 128-Bit VGA for $99 more
- Upgrade STB Powergraph 64 3-D VGA $call

QP5/120 M-4.....$2299
QP5/133 M-4.....$2349
QP5/150 M-4.....$2449

QP6/200 SM-2 $3549

Features PENTIUM® PRO PROCESSOR

- Intel 200MHz Pentium Pro processor
- 32MB RAM
- 256KB Internal L2 Cache
- 2.5GB EIDE Mode 4 Hard Drive
- 3.5" 1.44MB Floppy Drive
- Diamond Stealth64 PCI Video w/2MB VRAM
- 17" .25dp MAG Technitron Monitor (Based on Advanced Sony Trinitron CRT)
- 28.8 fax/modem w/voice mail & speakerphone
- Toshiba 8X EIDE 145ms CD-ROM Drive
- Ensoniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-31 Speakers w/ subwoofer
- Mid-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Windows 95 with Microsoft Plus!
- Professional Software Bundle (preinstalled)

QP6/150 SM-2.....$3199
QP6/180 SM-2.....$3299

QP6/200 WS-2 $5099

Features PENTIUM® PRO PROCESSOR

- Intel 200MHz Pentium Pro processor
- 32MB RAM
- 256KB Internal L2 Cache
- 4GB Fast Wide SCSI Hard Drive
- 3.5" 1.44MB Floppy Drive
- Adaptec 2940W PCI Wide SCSI Controller
- Diamond Stealth64 PCI w/4MB VRAM
- 21" .28dp MAG 1600x1280 Monitor
- Toshiba 6.7X SCSI CD-ROM Drive
- ATX Tower Case
- MS Natural Keyboard
- Microsoft Mouse
- MS Windows NT Workstation 3.51
- 3-Year Limited Warranty+
- Upgrade to 64MB RAM for $600 more

QP6/150 WS-2.....$ 4749
QP6/180 WS-2.....$ 4899

the Intel Inside logo are registered trademark of Intel Corporation". Microsoft and Windows 95 are registered trademarks and Windows NT is a trademark of Microsoft Corporation. Some of the names or trademarks shown herein may be the property of other companies. Quantex Microsystems, Inc. 1996. All Rights Reserved.

Family Software Bundle

- Novell PerfectHome: PerfectWorks; Memphis Math; Write With Me; InfoCentral; Grammatik; Clip Art for the Home; Clip Art for the Office; Read With Me 1 & 2; PerfectWorks for Kids
- Grolier Multimedia Encyclopedia
- Complete Reference Library (over 10 titles)
- Al Unser Jr. Arcade Racing
- USS Ticonderoga
- Animals II
- How Your Body Works
- Quicken Financial Manager-SE
- EveryWhere USA Travel Guide
- America Online, Prodigy, CompuServe (one month trial membership to on-line services)
- NetCruiser Plus (Free Internet Access of over 400 hours for one month)
- Microsoft Internet Explorer 2.0

Professional Software Bundle

- Novell PerfectOffice: WordPerfect 6.1; Quattro Pro 6.0; Envoy; InfoCentral; Presentations GroupWise
- Grolier Multimedia Encyclopedia
- Complete Reference Library (over 10 titles included)
- SharkWare (The best way to manage your Contacts, Calendar, Phone Calls and To-Do list)
- Quicken Financial Manager-SE
- Astound (#1 in Multimedia Presentations)
- Phone Disc Business '95
- Al Unser Jr. Arcade Racing
- USS Ticonderoga
- America Online, Prodigy, CompuServe (one month trial membership to on-line services)
- NetCruiser Plus (Free Internet Access of over 400 hours for one month)
- Microsoft Internet Explorer 2.0

Upgrade Specials

"Options Available with System Purchase"

- Microsoft Natural Keyboard Add $39
- Panasonic KX-6100 Laser Printer Add $349
- Conner Tape Backup 850MB Add $149
- Conner Tape Backup 3.2GB Add $199

"Options Available with QP6 Workstation Purchase Only"

- 6.7X SCSI CD-ROM Drive to Panasonic Power Drive²....Add $199
- Sony 1.3GB Magneto Optical Drive.....Add $1299
- Conner 8GB SCSI Tape Backup..... Add $399
- Iomega Zip Drive..... Add $179

New sales hours! 9 a.m. to 12 a.m. Monday through Friday, and 9 a.m. to 6 p.m. on Saturday (ET)!

Quantex Microsystems, Inc.
400B Pierce Street, Somerset, NJ 08873

Canada 1-800-793-4167

Puerto Rico 1-800-793-4185

April Greiman

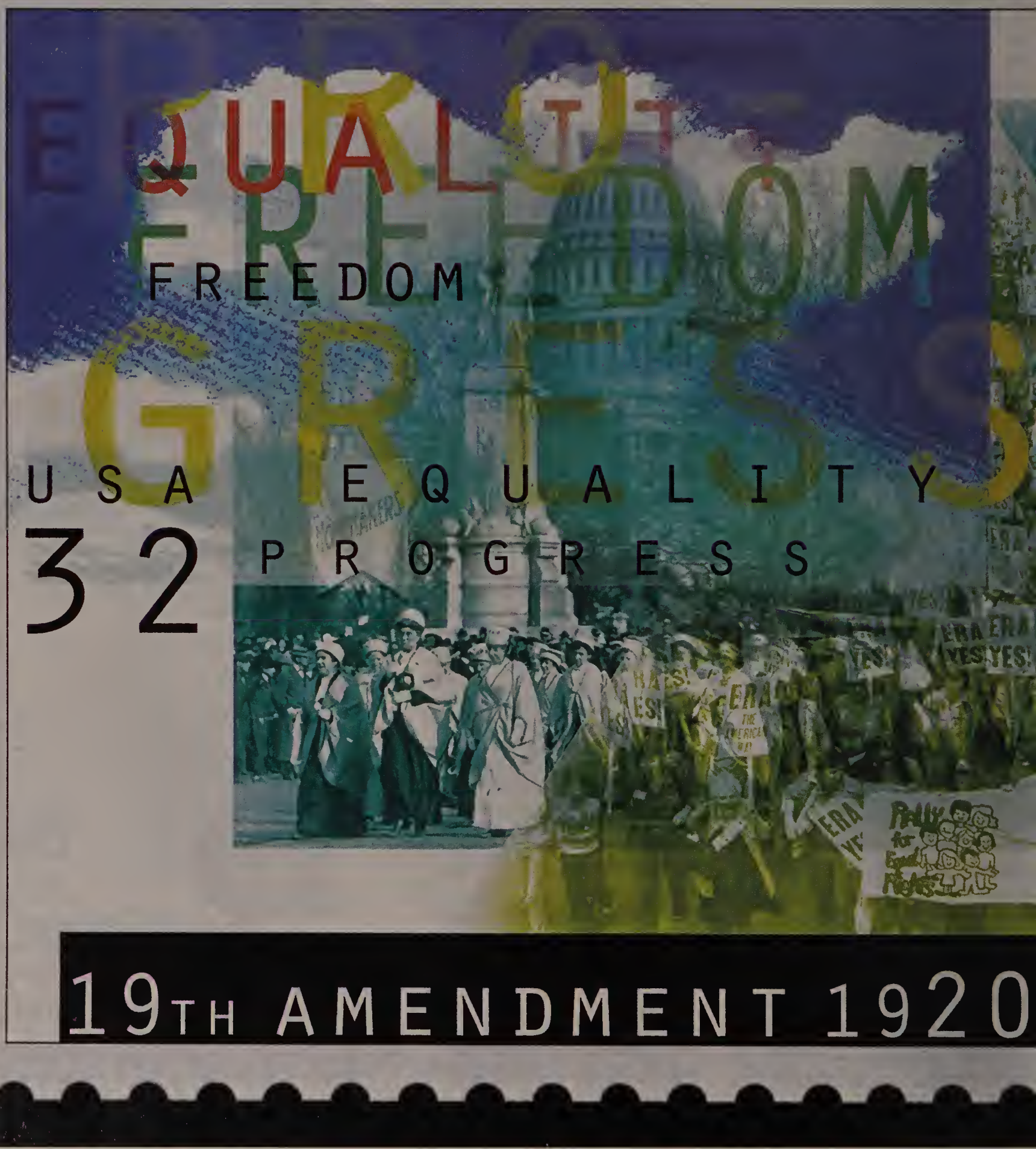


Image created by April Greiman ©1995 U.S. Postal Service. Adobe, Adobe PageMaker, Adobe Acrobat and the tagline, "If you can dream it, you can do it" are trademarks or regis
sidiaries which may be registered in certain jurisdictions. All other marks and trademarks are the property of their respective companies. ©1996 Adobe Systems Incorporated.

on PAGEMAKER 6.0.

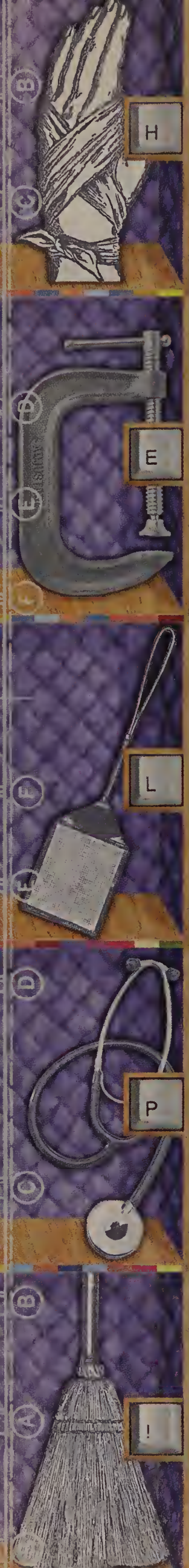
lemarks of Adobe Systems Incorporated or its sub-
ghts reserved.

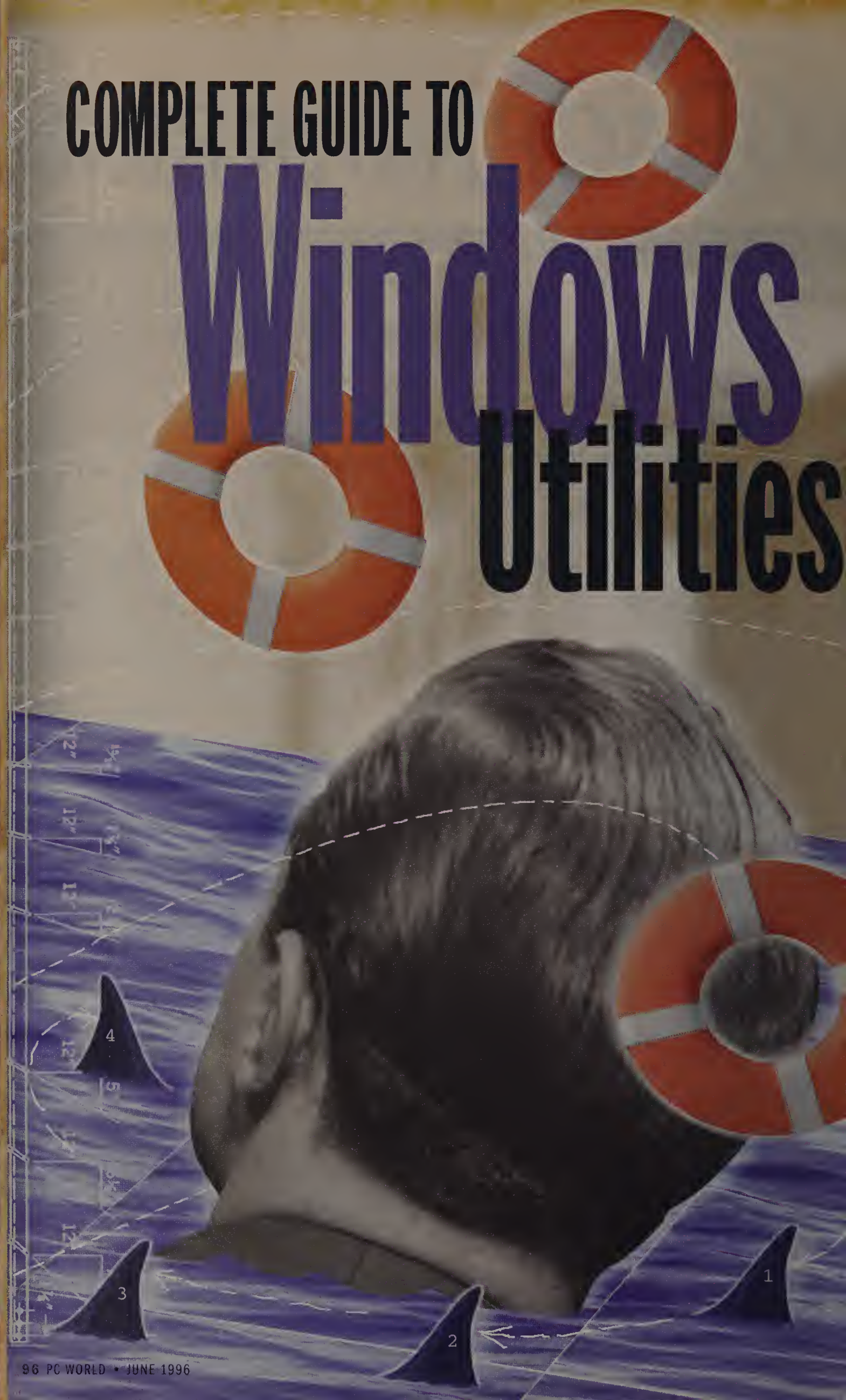
While other designers were hunched over their drafting boards, April Greiman was among the first to realize the potential of electronic technology using Adobe™ PageMaker™. Today she is a recognized leader in graphic, environmental, motion and interactive format design. She has earned lasting recognition for trend setting graphics, interactive television interface designs, textiles, even industrial surfaces. Her graphic software then and now: Adobe PageMaker. Today's new Adobe PageMaker 6.0 is more powerful and advanced than ever. It's integrated with Kodak's Precision Color Management System for incredible color control. For more complex jobs, multiple master pages speed the creation of different pages in a single publication. Other new features include grouping and ungrouping to move and edit multiple elements as a whole and integrated automatic trapping for color publications. And to help April create and publish great work anywhere, even across the Web, she can output her files in HTML and the Adobe Acrobat™ Portable Document Format (PDF). Finally, Adobe PageMaker 6.0 is so easy to use, you don't have to be a leader in digital design to use it. But Adobe PageMaker could help you look like one. Call 1-800-422-3623, Ext. E1672 for more information or visit our Web site at http://www.adobe.com/.

If you can *dream* it, you can *do* it.™

Circle 12 on reader service card

COMPLETE GUIDE TO Windows Utilities





Windows 95 isn't perfect. It needs help. So we torture-tested the leading utilities to pick the winners—and the losers. Plus: The best choices for Windows 3.1.

BY MICHAEL GOODWIN

You finally mustered the courage to upgrade to Windows 95. You remove the shrink-wrap and, ever so nervously, you install the new operating system on your hard disk. Following a flawless installation, you add new 32-bit applications, and they all live in harmony on your computer. Six months go by, and you're still happy—no problems, no crashes, no lockups, no conflicts. You died and went to Redmond.

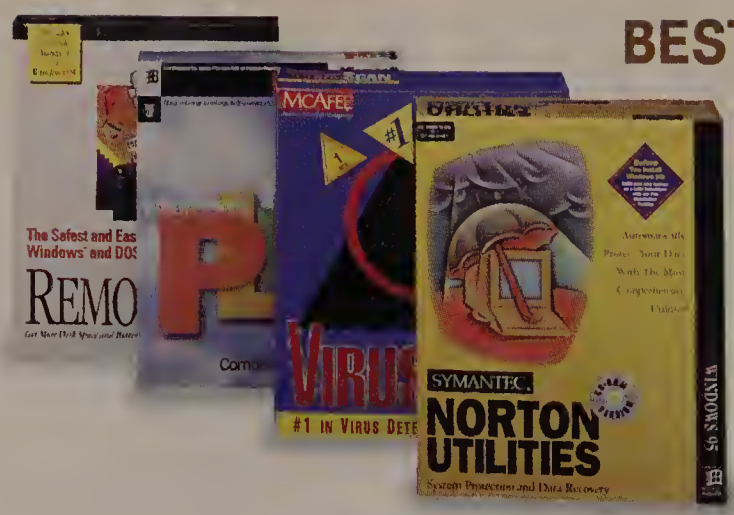
And then you wake up.

Windows 95, though quite an improvement over its predecessors, is a long way from fail-safe. Crashes, conflicts, and other disasters still abound, and you need to be prepared for the worst. Windows 95 does offer a decent insurance policy by way of some bundled disk and file utilities, but you're in for a few nasty surprises if you rely solely on these.

To identify the best utility for each task, the PC World Test Center looked at 24 Windows 95 utilities—including those that come with the operating system itself—in seven different categories. Our test system was a Hewlett-Packard Vectra VL3 596/90 Pentium-90 with 16MB of RAM and a 2GB hard drive. As we found in our extensive testing, you're better off in some cases (with uninstallers, for example) using third-party utilities—but when it comes to diagnostics, you should save your money. But any way you slice it, prepare to invest a little extra for peace of mind.

CONTENTS

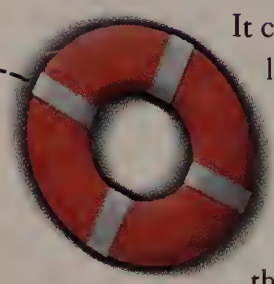
98 Compression
99 Uninstallers
101 Memory Managers
102 Antivirus
106 Defraggers
108 Diagnostics
114 Recovery



BEST OF BREED

COMPRESSION DriveSpace 3
UNINSTALLER Remove-It
MEMORY MANAGER *save your money*
ANTIVIRUS VirusScan
DEFRAGGER Norton Speed Disk
DIAGNOSTICS *save your money*
RECOVERY Norton Disk Doctor

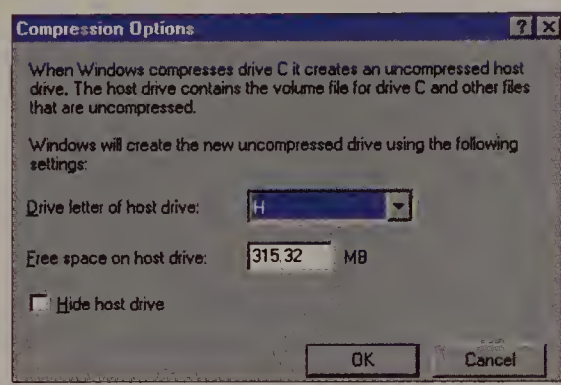
DISK COMPRESSION



It certainly sounds like a free lunch: Multiply the storage capacity of your hard disk with a transparent compression system that shrinks files when you save them and expands the files when you need to use them, all automatically.

Unfortunately, as with most free lunches, there's a price to be paid. Performance takes a hit when you add compression and decompression to your computing. And with the price of multigigabyte drives plummeting faster than the Chernobyl real estate market, why bother? Why indeed. There are two schools of thought on this issue. One (mine) says that compression is somewhat risky and slows down the system, while big, new hard disks are easy to install. On the other hand, there are some users who'd need an information systems professional or paid consultant to do the hardware upgrade. Adding a second hard disk often means dealing with irritating master/slave configurations. Replacing a hard disk can be even more troublesome: Back up, reinstall the operating system and the software, then cross your fingers and restore your files. Besides, with fast Pentium PCs and Windows 95's 32-bit file system, is the performance hit as bad as it used to be?

To find out, we tested the three top disk compression utilities. Yes, all three slowed performance—but the hit was light in some cases. DriveSpace 2, which comes with Windows 95, delivered the fastest on-the-fly compression/decompression performance. Stac's Stacker 4.1 came through with the largest amount of usable disk space but took a performance hit in comparison with DriveSpace 3, which comes with Microsoft Plus.



FOR BEST SPEED AND GREATEST EASE OF USE, Windows 95's built-in DriveSpace 2 disk compression utility can't be beat.

DriveSpace 2 (Windows 95)

PROS: Included with Windows 95, fastest on-the-fly compression and decompression, supports Windows 95–compatible disk utilities, easy to use

CONS: Limited to 256MB partitions

In many ways, DriveSpace 2 is the most appealing of the disk compression products we looked at for this review: The price is right—if you have Windows 95 you've already got DriveSpace 2—it's extremely easy to use, and its on-the-fly compression/decompression is so fast you might forget it's there at all.

About the only drawback worth mentioning is its upper limit on drive size: DriveSpace 2 can handle up to 256MB, so on a larger drive it lets you create several logical drives, compressing each separately. This is a minor nuisance, but it doesn't affect overall performance.

You can get substantially higher disk compression ratios from DriveSpace 3 and Stacker 4.1, but you'll pay a price in performance—as well as in cold cash. DriveSpace 2 delivers all the disk compression most users will ever need.

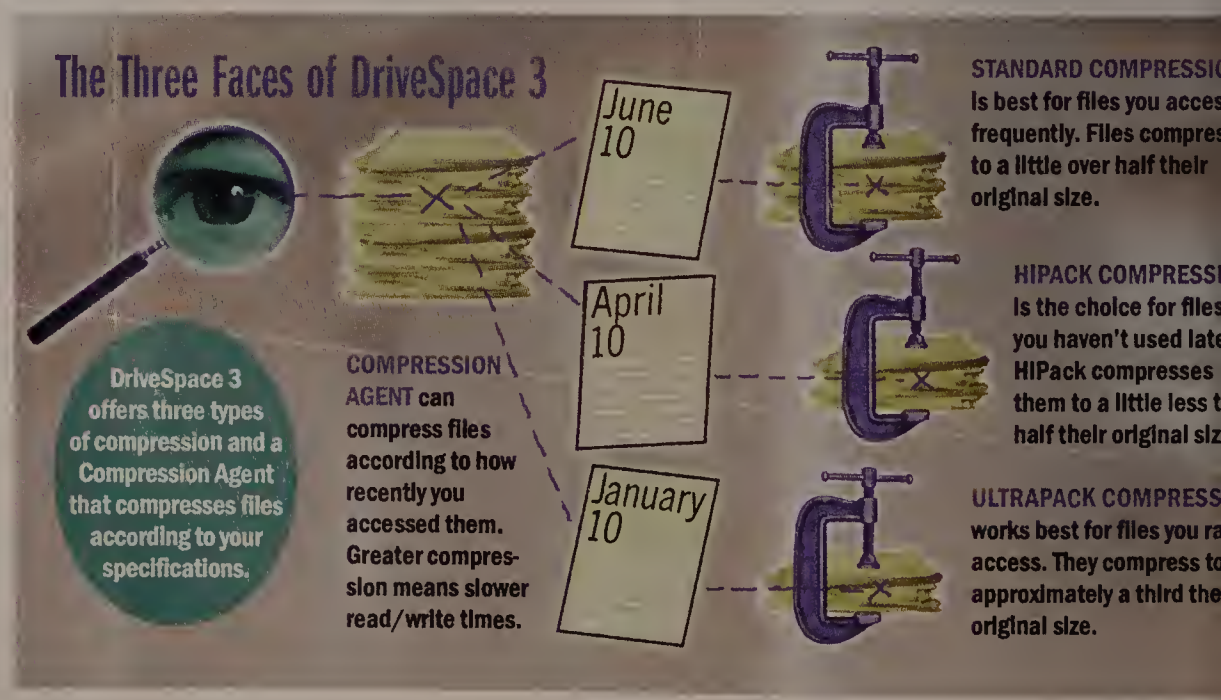
DriveSpace 3 (Microsoft Plus)

PROS: Compresses partitions as large as 1GB; works with Windows 95–compatible disk utilities; HiPack and UltraPack result in extra disk space

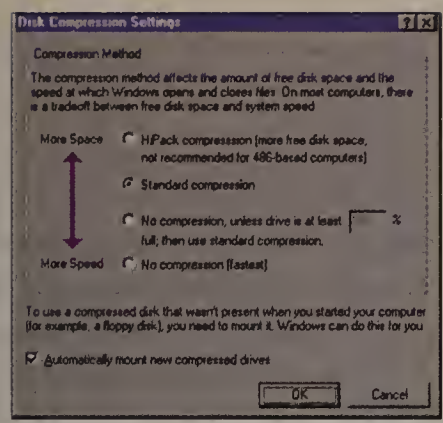
CONS: Not free

DriveSpace 3, which comes in the $49 Microsoft Plus companion to Windows 95, uses the same straightforward, intuitive interface as DriveSpace 2 and supports the same standard Windows 95 disk utilities. But DriveSpace 3 boasts several significant enhancements over its sibling. For starters, you get a bit more usable disk space, and initial compression is a little faster. But our tests show that DriveSpace 3's on-the-fly compression/decompression is marginally slower than DriveSpace 2's.

DriveSpace 3 includes several features that expand your disk compression options, especially for large drives. It allows you to



compress partitions as large as 1GB, giving you about 2GB of usable disk space. And two optional modes, HiPack and UltraPack, boost you to new levels of compression. The latter scheme results in extremely high compression ratios, but at a price: UltraPacked files take longer to decompress.



DRIVESPACE 3 has advanced compression options and handles bigger drives.

Still, if you use UltraPack for files that you access only rarely—which is what UltraPack is intended for in the first place—you won't notice much of a slowdown in your day-to-day operations. Also, you could automate the process: Microsoft Plus's System Agent can be used to set DriveSpace 3's Compression Agent to fire up whenever your system is idle in order to UltraPack files you haven't accessed in a long time.

And there's one more reason why you should go for DriveSpace 3 if you've got a large drive. Large partitions waste lots of disk space—sometimes hundreds of megabytes on 1GB or larger drives—because of their inefficient cluster size default. If you run DriveSpace 3, you can eliminate this problem altogether: The utility saves a compressed volume as one contiguous chunk.

Stacker 4.1

PROS: Large drive capacity

CONS: Setup problems, slow on the fly, does not support Windows 95 utilities

Stacker gets you lots of usable disk space, though not as much as DriveSpace 3's combination of HiPacking and UltraPacking. From then on, it's all downhill. For example, a Paradox test that ran in 8 minutes, 14 seconds before compression, took 12 minutes, 57 seconds with Stacker; while DriveSpace 2 yielded 8 minutes, 29 seconds.

We also ran into a few installation problems. Stacker sets up and removes its compressed drives in DOS, and on several occasions it failed to make a successful transition from Win 95 to DOS and back.

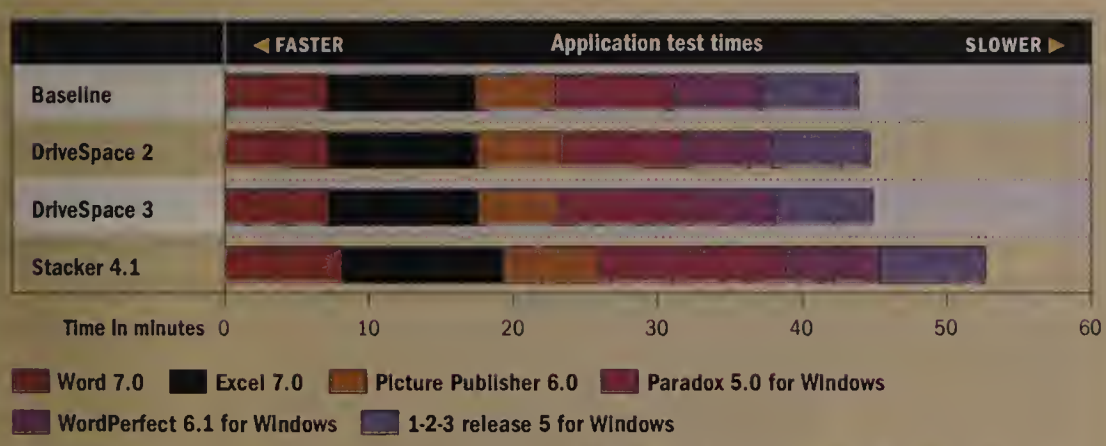
STACKER 4.1 delivers the best disk compression, but it can't use Windows 95 utilities.

Windows' swap file won't run well on a compressed disk. Nonetheless, Stacker's installation placed the swap file on the compressed drive—and our apps started crashing. We had to tweak that configuration manually.

Stacker uses its own built-in utilities to check, repair, and defrag its compressed drives—and some of them must run in DOS mode.

For more information about all these disk compression utilities, circle reader service no. 912.

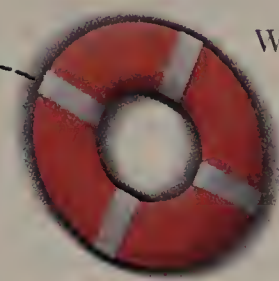
TEST REPORT Compression Doesn't Always Slow You Down



Methodology We compressed a 256MB partition to the default ratio for each utility, then ran PC WorldBench. For a description of the PC WorldBench 1.0 tests, see the Test Report in this month's system review.

Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

UNINSTALLERS



Windows programs weasel themselves into so many subdirectories and write so many entries into so many .ini files that getting them *off* your hard disk has become a growth industry. Uninstallation utilities promise to free your hard disk of all traces of programs that have fallen from grace—but do you really need a third-party utility when Win 95 has its own Add/Remove Programs applet? The short answer is yes. Even if you overlook Add/Remove's erratic performance, this tool uninstalls only Windows 95 applications that abide by Microsoft's logo specs. Windows 3.*x* and DOS apps, and even Windows 95–compliant programs that don't carry Microsoft's much-ballyhooed logo, need the third-party utilities.

We looked at three Win 95 uninstallers: MicroHelp's UnInstaller 3.5 for Windows 95, Quarterdeck's CleanSweep 95, and Vertisoft's Remove-It for Windows 95, as well as Windows 95's built-in utility, hoping to discover which one would return our hard disk's file system to its primal state—that is, before we installed any of the test bench applications. We tested each utility in two modes: removing applications that were previously installed without using the uninstaller, and deleting apps after the utility had monitored their installation, which presumably would make it easier to remove them. And in each mode we ran three scenarios, uninstalling applications designed for DOS, Windows 3.1, and Windows 95.

We found that Heisenberg's uncertainty principle, which states that the act of observing changes the thing being observed, applies here. The process of monitoring the hard disk introduced a number of log files, .bak files, and .ini files that messed up our neat before-and-after counts. We finally decided that if the total number of files on the hard disk after uninstallation came within five of the number before installation, we'd call that "perfect."

We have a clear winner: VertiSoft's Remove-It consistently removed more unwanted files and directories than the rest. We found a loser, too: Win 95's Add/Remove Programs was virtually worthless.

Alive and Well: Windows 3.1 Utilities

Are you still running Windows 3.1? Do you feel as if aliens have invaded your world? Greetings, earthling. We bear bad news and good news. The bad news first: Very few software companies are developing new utilities for Windows 3.1 or releasing updates of existing versions. But the good news is, some of the best of this breed are still being sold and supported. You are not alone. Here are our favorite Windows 3.1 utilities, available in stores or on the Internet as shareware:

Diagnostics and Recovery

Norton Utilities 8. The granddaddy of all utility packages includes recovery and diagnostic tools for every possible disaster or paranoia you may experience.

Zip/Unzip

WinZip 6. Nico Mak Computing keeps updating its stellar zip front end for Windows 3.1 alongside the Windows 95 version.

Antivirus

VirusScan: You can't go wrong with the Windows 3.1 version of McAfee's popular antivirus utility. Once you register this shareware program, you can download updates of new virus signatures from McAfee's World Wide Web site as often as they're released.

Memory Management

QEMM. Squeeze the last drop of memory out of your system with Quarterdeck's powerful utility. Now you can play Doom until you drop—or until one of those murderous villains gets hold of you.

File Viewer

Keyview. FTP Software's collection of file viewers and conversion tools (see "The Comfort Zone: File Management Tools") is available for Windows 3.1, too—in the same box as its Windows 95 offering, at no extra cost.

Shell Replacement

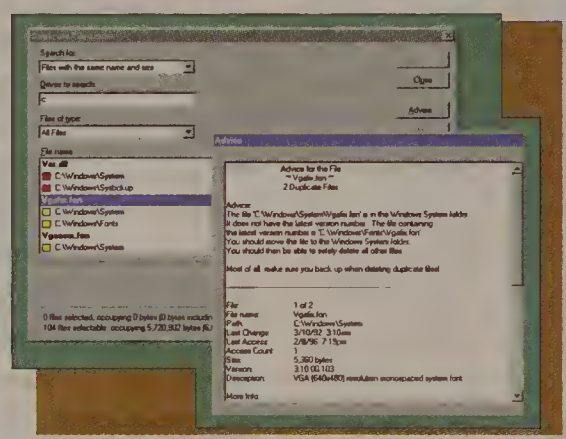
Dashboard 3.0: This tiny utility does away with the clumsy and unsightly Program Manager. Unlike other Program Manager replacements, which tend to be memory hogs and have been known to bring systems to a screeching halt, Dashboard has little or no impact on your system's resources. In fact, it speeds things up for you with its elegant design and QuickLaunch feature. Ladies and gentlemen, start your engines!

—Yael Li-Ron

CleanSweep 95

PROS: Deletes Windows 3.1 applications perfectly, uninstalls program folders, great cleanup advice

CONS: Unreliable with previously installed apps, small file window, Install Monitor needs some tweaking



QUARTERDECK'S CLEANSWEEP 95 offers detailed, easy-to-follow advice on cleaning up your hard drive.

The first thing you notice about CleanSweep 95 is its relatively small uninstall window and large program icons—which means you have to scroll from side to side to view all your installed apps. On the upside, CleanSweep lets you delete program folders in a single operation, even preinstalled ones that existed on the hard disk before you installed CleanSweep itself; most uninstallers force you to mark every preinstalled executable file that you want to remove.

Still, CleanSweep 95 is only a mixed performer: When it came to removing our test suite of Windows 3.1 apps, it did a perfect job—but when we asked it to remove a preinstalled copy of Lotus SmartSuite 95, it left behind more than 500 Lotus files, nearly 30 unwanted directories, and far too many lines in various .ini files. CleanSweep did a much better job of removing the applications that we installed using the Install Monitor. However, you need to micromanage Install Monitor's list of program names. For instance, it automatically keeps track of the setup .exe and install.exe installation programs, but it ignores install.exe unless you instruct it otherwise.

CleanSweep 95 really sparkles in the cleanup mode, which strips out excess baggage. Not only is it a snap to find duplicate files, uscless .dlls, orphan applications, redundant icons and the like, but if you're not surc what a given .dll or .ovl actually does, a helpful summary of file dates, access counts, vendor names, and version numbers is only a click away. You can also identify unused fonts, backup files, outdated display drivers, and wallpaper—and terminate them with extreme prejudice.

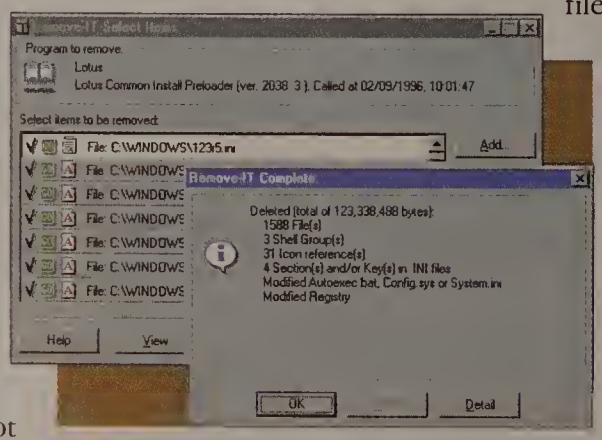
CleanSweep 95 may not be the newest broom in the uninstaller utility closet, but it does a decent job of sweeping out the trash.

Remove-It for Windows 95

PROS: Outstanding uninstall performance, easy to use, uninstalls program folders, great cleanup advice

CONS: Small file window, install routines with unusual names must be added to Log-It, may leave empty directories

Vertisoft's Remove-It was the winner in every test, leaving behind the smallest number of files, the cleanest .ini files, and, in all but one suite, the fewest unwanted directories. This utility delivered flawless performance in three out of six test suites and achieved near-perfect performance in a fourth. Even when the applications were preinstalled, Remove-It did a bang-up job. It



REMOVE-IT UNINSTALLS ENTIRE PROGRAM DIRECTORIES with a single keystroke, but it lets you second-guess.

stumbled only once—leaving behind 12 empty directories in one test (the "monitored" uninstallation of SmartSuite 95)—but this was easy to clean up with Windows' file management tools.

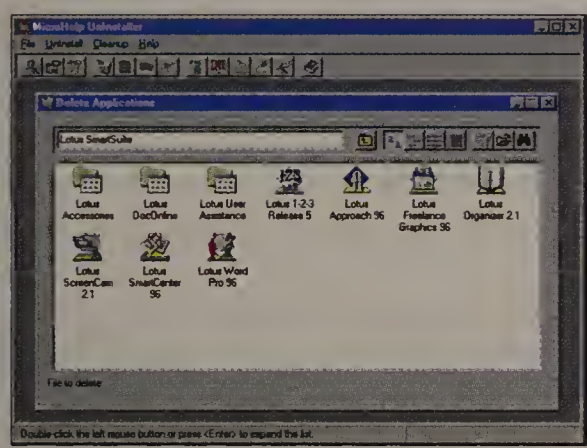
On the whole, Remove-It is best at decimating the applications it installed itself with its Log-It module. And it slays 'em faster in this mode: Once Log-It is activated, you click just one title bar to wipe out an entire multiprogram, multidirectory application instead of having to click and delete executable files one by one. Unfortunately, as with CleanSweep 95, programs with unusual names need to be added to Log-It's list. Another similarity to CleanSweep is that Remove-It has a relatively small uninstall window—but since the icons are also small, it's easier to navigate the directory tree without scrolling from side to side.

I was impressed with Remove-It's Clean-It, Watch-It, and Find-It modules, designed to track-and-destroy a panoply of digital, trash including left-over Registry entries, useless .dlls, unneeded fonts, orphan applications, and duplicate files. A splendid set of information tools tells you which application created every esoteric .dll and .ovl and precisely what each of them does—all of which helps you make those crucial thumbs-up or thumbs-down decisions.

UnInstaller 3.5 for Windows 95

PROS: Easy-to-use Installation Monitor, flexible file window

CONS: Poor uninstall performance, cleanup module could provide more extensive assistance.



UNINSTALLER'S FILE-SELECTION WINDOW offers the greatest flexibility, but you still have to remove executable files one by one.

MicroHelp's UnInstaller for Windows 3.1 was the first product of its kind. But unfortunately UnInstaller 3.5's performance in the Windows 95 environment leaves a great deal to be desired. In three out of six tests it turned in terrible scores. For example, in our test with preinstalled Windows 3.1 applications, a perfect uninstall would have left the hard disk with 816 files. Remove-It and CleanSweep left 819 and 820 files, respectively. UnInstaller left 1107 files—and two directories.

The Installation Monitor has some problems, but it's easy to use. And it solves the name-list hang-up by not using a list at all: When it's time to install a new application, you simply use the Installation Monitor instead of Windows' Run command. Thereafter, UnInstaller keeps track of the entire installation process. Overall, UnInstaller 3.5 did much better with apps that we had installed with Installation Monitor.

UnInstaller's file-deletion window is not resizable, but it's still the best of the bunch: You can view files as large icons, small icons, or a detailed list. Unfortunately, there's no way to uninstall an entire program folder; you must delete executable files one at a time.

If your hard disk is short on space, just fire up UnInstaller's cleanup module. It will flush out plenty of candidates for your better-off-dead list.

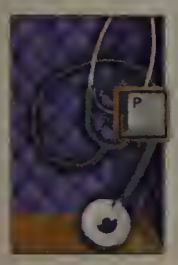
Win 95's Add/Remove Programs Applet

PROS: Price is right, easy to use

CONS: Doesn't uninstall all apps (not even all Windows 95 apps), leaves files and directories behind

The biggest problem with Windows 95's Add/Remove Programs applet is that it

Memory Managers—Forget It



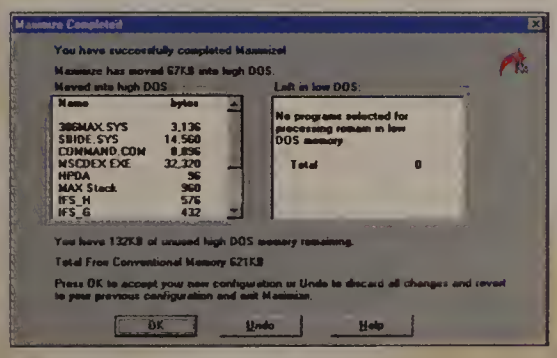
Back in the days when DOS was boss, no one ever had enough conventional memory. TSRs and device drivers gobbled huge amounts of that precious 640K, often leaving insufficient RAM to run applications.

Memory managers like QEMM 8 arose to save the world from RAM cram. They found odd corners of the memory map where drivers and TSRs could be stashed, and they played clever tricks with special drivers, leaving more base memory available for applications.

But that was then—this is now. Windows 95 comes out of the box with a powerful set of memory management routines. So as long as you've got at least 8MB of RAM in your PC you shouldn't need any outside help to run Windows-based applications. Okay, Quarterdeck's QEMM 8 claims that its MagnaRAM feature increases Windows 95 memory, but our tests failed to show any benefits. (See "Ram Doublers No Substitute for Real RAM," *Top of the News*, January.)

If you're not loading any real-mode drivers or 16-bit TSRs—and why would you?—Windows 95 provides plenty of conventional memory in its DOS box. If you need more for a RAM-hungry game (I've seen some that demanded 610K!), or if you're still using legacy applications or 16-bit device drivers, both QEMM 8 and Qualitas Max 8 can give you the extra memory. On my system, chkdsk found 570K in Win 95's DOS box before memory was optimized, and 610K to 620K afterwards, with both products producing almost exactly equal amounts. But there's no pleasure without a price. Both products worked fine in the DOS box, but when I exited to DOS, they sometimes caused a fatal system crash.

The bottom line: If you use only 32-bit apps, you don't need a memory manager.



Utilities like Qualitas Max 8 can buy you up to 50K of extra memory in the DOS box, but they won't do much for Windows 95.

For more information about all these memory managers, circle reader service no. 913.

doesn't work. That is not to say that it completely fails to delete executable files and correct .ini files—in one test it performed reasonably well doing exactly that. But then again, in a second test it did pretty badly: Where Remove-It left 818 files, Add/Remove Programs left 874. A major difficulty with Add/Remove Programs is that your preinstalled Windows 3.1 applications don't appear in its list of uninstallable files. In fact, unless an application comes with its own Windows 95–compliant uninstall module, Add/Remove Programs doesn't list it. And if a program isn't listed, you cannot use Add/Remove Programs to uninstall it.

All of which means that you don't need Add/Remove Programs; you can simply run the application's own uninstall utility, if it has one, or for best results invest in a third-party uninstall utility. The bottom line is, don't count on Windows 95's Add/Remove

Choosing an Antivirus Utility

Some forms of paranoia are healthy. When it comes to securing your system from viruses, trust no one, not even your mother—when you exchange disks with her, that is.

There are thousands of viruses in existence, but only a little more than a hundred in wide distribution. Most of them are *boot-sector* viruses, which damage your hard disk's boot sector. These perpetrators are transmitted almost exclusively via disks. Another villain that is multiplying at a dizzying pace is of the Word macro virus variety, transmitted by exchanging Word documents based on contaminated templates.

We tested six Win 95 antivirus utilities. Our lab tests easily eliminated two: PC-cillin 95 and ThunderByte were confusing and unreliable. That left four stellar products in a tight race. At the end, VirusScan won for solid performance, ease of use, and support for multiple platforms.

—Yael Li-Ron

For more information about all these antivirus utilities, circle reader service no. 914.

Antivirus Programs: Close Race

	Detection	Cleaning	Recursive archives	Gotchas	Performance	Extra goodies	Ease of use
Dr. Solomon's Anti-Virus Toolkit for Windows 95	Successful	Cleaned all viruses outside archives. Messages indicated that files within archives were cleaned too, but they were not.	Yes	No uninstall, no rescue disk.	Good balance of performance and thoroughness.	Versions are available for DOS, Windows 3.x, NT, Mac, UNIX, NetWare, and OS/2.	Excellent
IBM AntiVirus	Successful	Could not remove Word macro virus without deleting entire infected document.	Yes	No uninstall.	Not the fastest, but very thorough.	Great for corporations: DOS, Windows 3.x, and Warp versions with identical interface available in the same box.	Very good. Interface not perfect, but intuitive.
Norton Antivirus	Successful	Cleaned all viruses outside archives.	No	System halts with a warning message when a boot-sector virus is found on hard disk.	Scanning not the fastest, but very thorough.	Excellent rescue disk.	Very good
PC-cillin 95	Did not detect Word macro virus in original infected file, only in templates.	Did not clean Word macro virus. Confusing instructions when boot-sector virus is detected.	No	Scan program crashed once. BBS line busy often. Some viruses in database had no descriptions.	No noticeable slowdown with monitoring feature enabled.	Checks e-mail attachments. Includes DOS and Windows 3.x versions at no additional cost.	Good
ThunderByte Anti-Virus Utilities	Didn't detect Word macro virus. Detected boot sector viruses on floppies but not on hard disk.	Uses heuristic cleaning rather than precise knowledge of how to handle known viruses. Recommends that infected files be deleted.	No	Manual included for DOS version, not Windows 95 version.	Ultrafast, but not necessarily accurate.	None	User interface confusing and nonintuitive.
VirusScan	Successful	Cleaned all viruses outside archives.	No	Doesn't back up CMOS.	Fast	Versions are available for DOS, Windows 3.x, NetWare, and OS/2.	Excellent

BEST BUY

Methodology We infected the test system with six boot sector viruses, one after the other, and checked to see if the viruses were detected and removed. We also wrote files containing viruses to the hard disk as ordinary files and inside archives to test the products' effectiveness at handling these. Finally, we opened a document infected with Winword.Concept, modified it, and saved it to see if runtime virus detection could detect the spread of the virus.

ESCAPE THE OFFICE

WITHOUT LEAVING IT BEHIND.

These days your office can be anywhere you do business. Whether you're downtown or in your dining room, you need to stay in touch. That's why Fujitsu Microelectronics offers a complete family of integrated, world-class PC Cards, to give you immediate access to vital information while in the office or on the road.

Our ultraportable PC Cards offer a wide range of capabilities including multimedia, LAN, and high-speed communications. With Fujitsu, you get instant compatibility with virtually all of today's PCMCIA standard computing platforms in addition to multi-function capability and interoperability. Plus, our intuitive Microsoft® Windows-based installation software automatically sets up and configures your PC, which means fewer headaches and hassles. With Plug and Play features like hot insertion and removal, there's no need to reboot your system when swapping cards. You even get the ease and comfort of our extensive customer support services that ensure customer satisfaction and help you get the most from your investment.

So, if today's virtual office is leaving you feeling a little detached, call Fujitsu Microelectronics at **1-800-642-7616** and we'll get you connected.

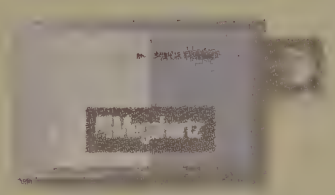
FUJITSU

FUJITSU MICROELECTRONICS, INC., 3545 North First Street, San Jose, CA 95134. ©1995 Fujitsu Microelectronics, Inc. All trademarks or registered trademarks are the property of their respective holders.

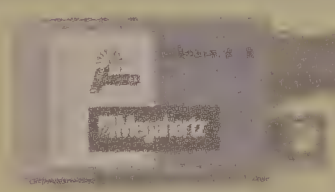
Circle 103 on reader service card

28.8 PC Card Modem With XJACK.

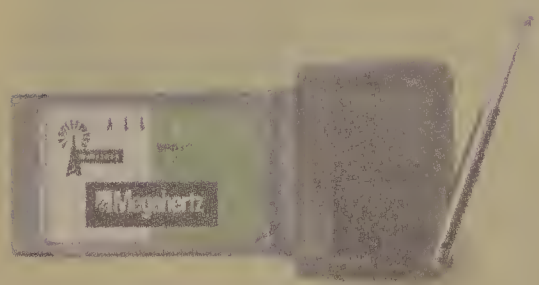
Cellular Direct Connect.
Digital Line Guard.
Home Office Implosion Avoidance.



PC Card Ethernet Adapter With XJACK.



28.8 Ethernet+Modem With XJACK.



AllPoints™ Wireless PC Card.

It is human
to return from a
with little soaps

It is human nature
luggage too big to fit in
under the seat in

It is human nature
office will implode if
for more than

We can help with
of human

The XJACK connector is U.S. Patent Nos. 5,183,404, 5,336,099 and 5,338,210, property of US Robotics Mobile Communications Corp. ©1996 US Robotics Mobile Communic
with you" are trademarks of US Robotics Mobile Communications Corp. Megahertz is licensed by Spe

nature
business trip
and shampoos.

to carry on
the overhead bin or
front of you.

to think the
you're out of touch
two hours.

some parts
nature.

It is human nature to want to communicate at any time, from anywhere. And in this respect, the business traveler is just a bit more human than most.

With that in mind, Megahertz presents the 28.8 PC Card Modem. It's designed to be compatible with you and the way you work.

Our newest innovation, Cellular Direct Connect with Cable Sensor, lets you stay connected no matter where you are, without configuring hassles. The patented XJACK® connector means you'll never have to carry (or lose) another cable for the rest of your business-traveling life. And Digital Line Guard actually warns you if you're about to fry your modem by plugging into a digital PBX phone line. (We all know how bad frying things can be.)

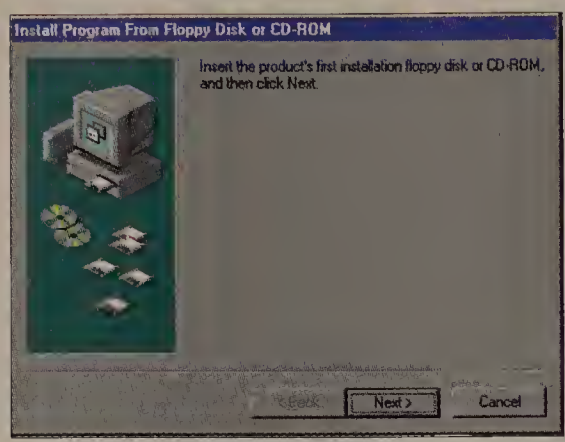
The end result is you'll always be in touch. Of course, first you'll need to be in touch with us. Just call 1-800-LINKING, ext. 4333. Or find us on the Net at www.megahertz.com/patible.

Megahertz® by U.S.Robotics®

Compatible with you.

Circle 138 on reader service card

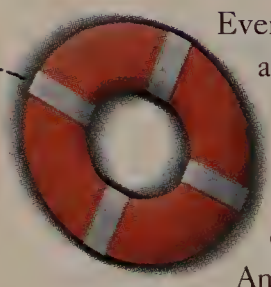
rp. Megahertz, the Megahertz logo and XJACK are all registered trademarks of U.S Robotics Mobile Communications Corp. AllPoints and "Compatible
ormation Technologies, Inc. It is human nature to always read the fine print.



EVEN IF YOU'VE USED WINDOWS 95'S ADD/REMOVE PROGRAMS APPLET to install software, it may not let you uninstall it.

applet to get rid of unwanted applications. **For more information about all these uninstallers, circle reader service no. 915.**

DEFRAGGERS



Ever since the first hard drives appeared, the files DOS stores on them have been getting fragmented. And as everyone knows, fragmented files are virtually un-American: They slow system performance and may even wear out your hard disk before its time.

Win 95 comes with Disk Defragmenter, which is challenged only by Symantec's Speed Disk defragger, included in Norton Utilities for Windows 95. Curiously enough, Microsoft's Disk Defragmenter is based on code from an older version of Speed Disk that Symantec sold to Microsoft.

Both defraggers handle all the basics. They track down file fragments and assemble them into nice, contiguous chunks. They remove space from between the now-contiguous files and dump it at the back of the disk. They check for file system errors, and warn you to fix them before defragging. And they let you choose between defragging files, consolidating space, and optimizing files and space together.

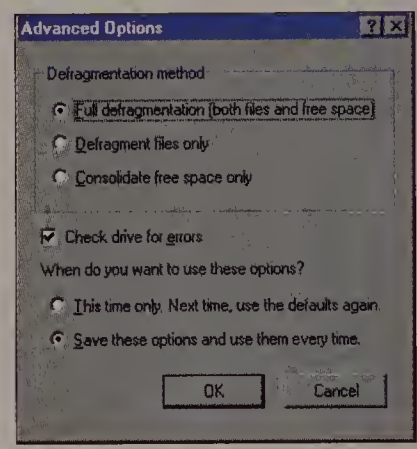
We ran benchmarks to compare the post-defragging speedup we got from both products and found no significant difference. However, Disk Defragmenter took a good deal longer to defrag the hard disk in the first place. So, do you need to spend the extra money on Norton when a perfectly good equivalent is built into Windows 95? You certainly do—read on.

Disk Defragmenter (Windows 95)

PROS: Solid performance, provides all basic features, included with Windows 95

CONS: 16-bit application, no write verification, slower

There's nothing seriously wrong with Disk Defragmenter; in fact, there's a lot right with it. It provides every must-have defragging feature, it keeps your hard disk defragmented, and it is included with Windows 95 at no extra cost. It did prove to be the slower of the two defraggers we tested, but that shouldn't be an issue if you run it overnight or during your lunch break. Also, theoretically, a 16-bit defragger like this is more prone to data loss in the event of a crash, but we didn't have a chance to test that theory.



WINDOWS 95'S DISK DEFRAGMENTER is all the defragger that most users will ever need.

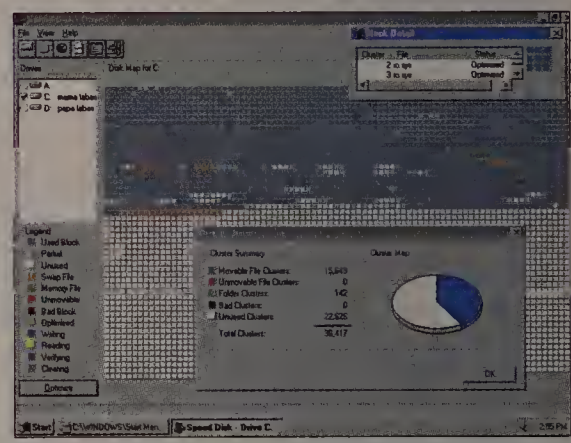
Norton Speed Disk (Norton Utilities)

PROS: 32-bit application, write verification, solid performance, automatically places files in best location

CONS: Costs extra

Speed Disk is a true 32-bit application, which makes it sturdier and less likely to crash than Microsoft's 16-bit equivalent. In addition, Speed Disk insures data integrity by performing write verification while defragging. Moreover, it can be configured to use Windows 95's new file access tracking system to place files in their best location: Frequently accessed files go to the front of the disk to maximize throughput, frequently changed files go to the back to minimize file fragmentation. If you're really paranoid, you'll be pleased to know that Speed Disk will wipe the free space left after a defrag, for extra data security. And Speed Disk comes with a separate DOS version to use *before* you install Windows 95 for your next system. Disk Defragmenter doesn't have these capabilities.

Finally, Speed Disk defrags Windows 95's dynamic swap file, and Disk Defragmenter doesn't. Microsoft states unequivocally that a fragmented swap file will have virtually no impact on performance; Symantec begs to differ, and, in theory, we tend to agree with Symantec. However, our tests indicate that Microsoft is probably right.

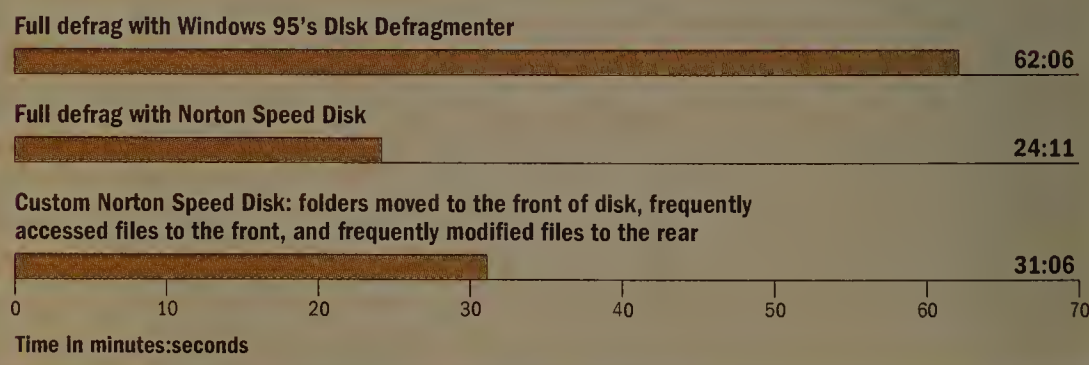


NORTON'S SPEED DISK OFFERS ADVANCED FEATURES like write verification and automatic file placement.

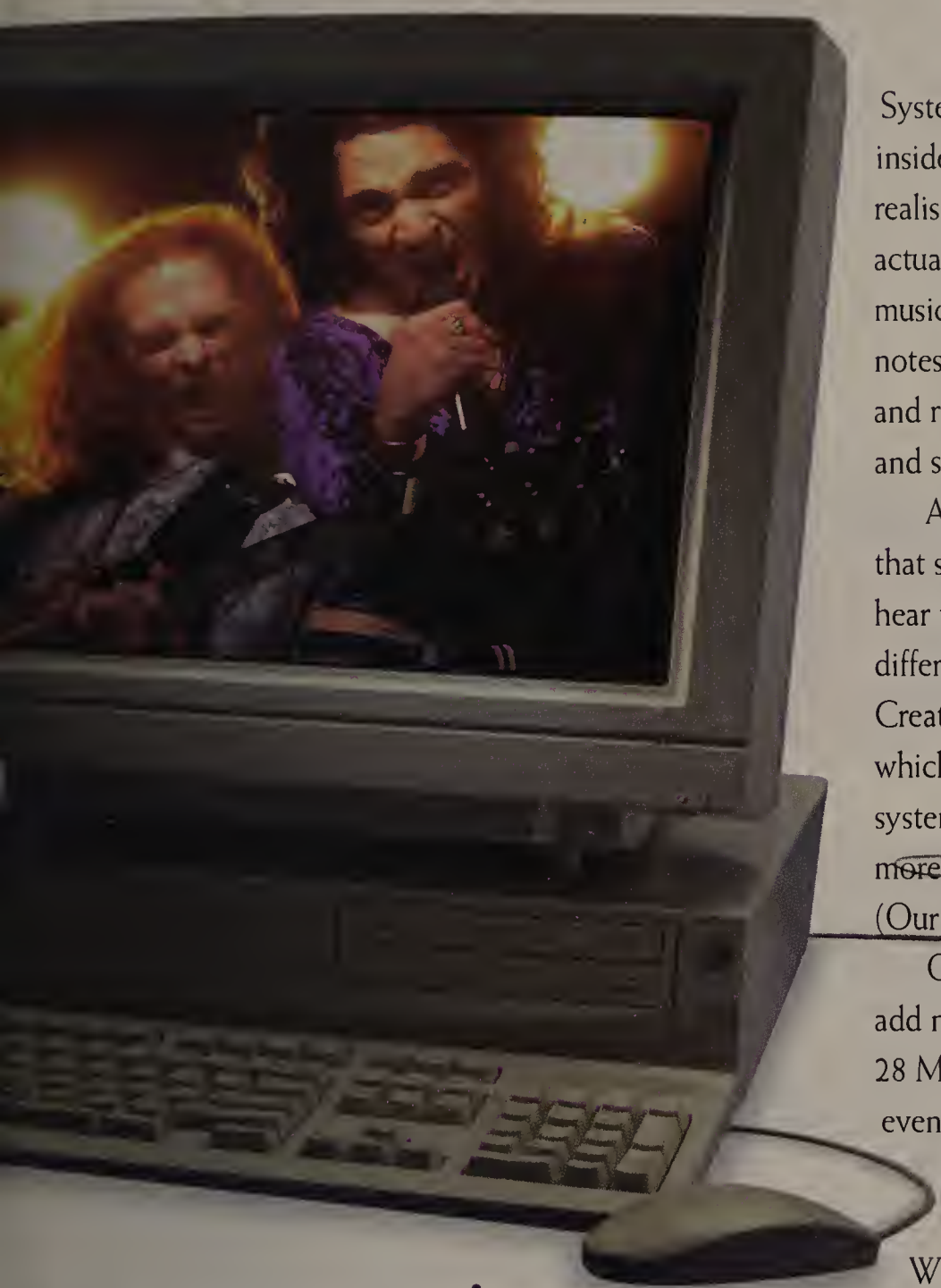
For more information about all these defraggers, circle reader service no. 916.

TEST REPORT There's No Such Thing as a Free Defrag

How long does it take to defrag a 1GB drive, and what's it worth to you? If time is money, then Norton Speed Disk pays for itself quickly.



A breakthrough in sound so real, your PC will have its own groupies.



Systems, the professional audio experts, inside your PC. It delivers the mind-bending realism of wave-table synthesis–which uses actual recordings of real sound effects and musical instruments. And it plays up to 32 notes simultaneously, adding new detail and richness to your favorite games and software.

AWE 32 is the first sound card that supports 3D Positional Audio™, so you can hear those dueling guitars coming at you from different places in the room. It also features Creative's 3D Stereo Enhancement Technology™, which makes your whole system sound richer and more powerful. (Our apologies to the neighbors.)

Our downloadable SoundFont® technology lets you add new sounds and instruments to your card. Add up to 28 MB of memory to create your own audio library. We even included a microphone and software for recording music and sound effects. And, of course, the AWE 32 is fully Plug and Play and works with Windows® 95, Windows 3.1 and DOS. So installation is a no brainer.

Check out our new line of Sound Blaster® Speakers, sold separately at your local dealer.

Want to complete your multimedia dream system? Pick up the new Blaster CD™ 8x CD-ROM and Sound Blaster Speakers too, at your nearest Creative Labs dealer. But take along your bodyguard, in case the groupies get carried away.

The crowd keeps growing until they have your house surrounded.

Then the chanting begins. "A-W-E...A-W-E...A-W-E."

It seems that Sound Blaster® AWE 32™ PnP is the first sound card to develop its own cult following. That's because it makes every other sound card seem like a blast from the past.

The AWE 32 puts professional sound technology from E-mu®

Sound Blaster AWE32 PnP. Hear What You've Been Missing

www.creativelabs.com

CREATIVE®
CREATIVE LABS, INC.

Circle 56 on reader service card

For more information call our Faxback service at 405-372-5227 or Customer Service at 800-998-5227 x135 © 1996, Creative Technology Ltd. All rights reserved. Sound Blaster and the Creative Labs logo are registered trademarks of Creative Technology Ltd. Sound Blaster AWE32, E-mu 3D Positional Audio and Creative 3D Stereo Enhancement Technology are trademarks of Creative Technology Ltd. SoundFont is a registered trademark of E-mu Systems, Inc. Windows is a registered trademark of Microsoft Corporation. Specifications are subject to change without notice.

DIAGNOSTICS

Oh? Your PC is on the blink? It might be a dire conjunction of constellations, but every now and then the fault is not in our stars, but in our hardware—or our software.

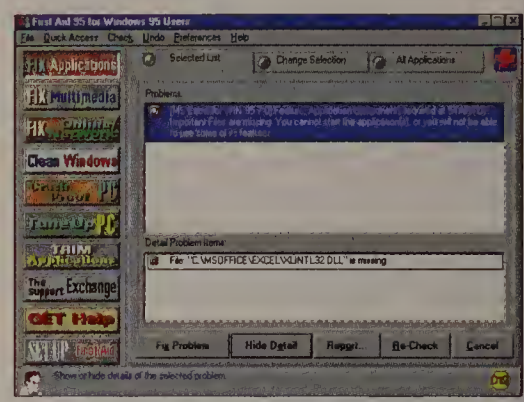
Windows 95 comes with sophisticated diagnostic and setup routines designed to install your hardware and software correctly in the first place—and every time you start the computer Windows checks to make sure everything is still on the up-and-up. So why would you need a third-party diagnostic? Good question: You don't.

The PC World Test Center prepared a Pentium PC with several bona fide hardware problems: They cut one of the leads to the floppy drive's read/write head and installed a network card and an internal modem with their jumpers set to produce an IRQ conflict and a problem on COM3. Then we loaded five diagnostics utilities (AMI's PC Care for Windows 95, CyberMedia's First Aid 95, Quarterdeck's WinProbe 4, Symantec's Norton Utilities for Windows 95, and Touchstone Software's WinCheckIt 4) to see what they would tell us.

They told us nothing. Most of the utilities reckoned that *something* was wrong, but none of them knew exactly what. (We were hoping for something like 'Select IRQ 5, base address 300 for that LAN card, and change the modem to IRQ 4'.) In fact, Win 95 offered better diagnostic help than any of the utilities when it pointed out that we were installing the network board on a busy IRQ.

As long as we were at it, we created a couple of software schisms: We moved a .dll into the wrong directory and set up a system crash that could be triggered by teasing Microsoft Office. Then we tested the diagnostic utilities' software configuration and crash-protection routines.

The bottom line is, save your money. For the gory details, read on.



FIRST AID 95 INSTANTLY FOUND A PROBLEM with Excel and fixed it. But its crash-protection module was less effective.

First Aid 95

PROS: Identifies and fixes misplaced .dlls

CONS: No hardware diagnostics, tune-up doesn't improve performance, crash-protection feature fails

First Aid 95 doesn't do hardware diagnostics. Its focus is on software. It promises to clean up your hard disk, tune performance, test and repair mismatched drivers, and correct Internet access problems. It also offers two capabilities that sound pretty slick: a fix-it feature to diagnose and repair configuration problems with any Windows app,

The Comfort Zone: File Management Tools

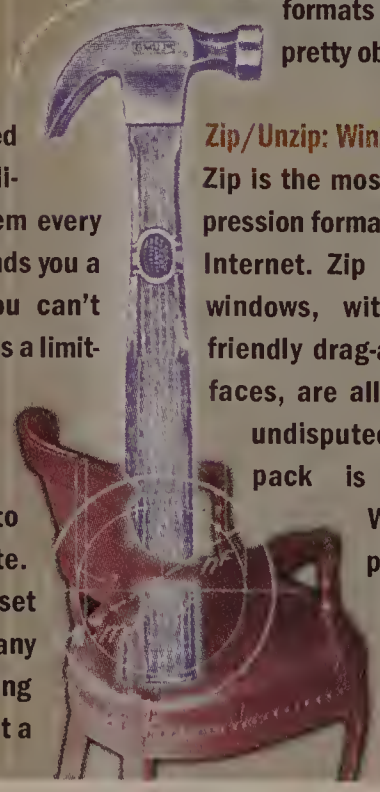
Your Windows 95 tool kit is not complete without the little extras that make file management more pleasant. Just as you'd pay extra for features that make driving a car more comfortable—electric windows, CD changers, and so on—utilities that enhance file management under Windows 95 are worth the sticker shock. Here are our favorites.

Explorer Replacement: PowerDesk

So how about that Win 95 interface? Far from perfect, right? MicroHelp's PowerDesk is a shell that promises to improve the way you interact with your PC. We can take or leave most of PowerDesk, but it's worth buying for its great ExplorerPlus component that's everything Explorer *should* have been. It includes a customizable toolbar, a DOS command line, and drive buttons. Another tool sorely missing from Explorer is Wildcard Select, which lets you choose all the *.doc or bud*.* files in one swoop.

File Viewer: Keyview

You can't be expected to install a new application on your system every time a colleague sends you a file in a format you can't read. Windows 95 has a limited collection of viewers by way of QuickView, but it's only good enough to whet your appetite. What you need is a set of file viewers for any format. Imagine being able to view and print a spreadsheet whose native app isn't loaded on your PC. There are several programs for this purpose, but we recommend FTP Software's Keyview because of its conversion tool, which handles popular word processing formats as well as some pretty obscure ones.



Zip/Unzip: WinZip

Zip is the most popular compression format on and off the Internet. Zip front ends for windows, with their user-friendly drag-and-drop interfaces, are all the rage. The undisputed leader of the pack is Nico Mak's WinZip—no competition. WinZip supports long file names and lets you install an archived program without decompressing it. It takes advantage of the right mouse button and is a pleasure to use.

File Transfer/Remote Access: LapLink for Windows 95

You're in Tulsa and your files are in Dallas. You know the drill: Call the office and have somebody overnight them to you on a disk. The disk arrives, but the data's corrupt. Travelling Software's LapLink is the best tool for those moments of panic. It lets you use a modem to get your files from a remote system, even one running Windows 3.1. File transfer and synchronization is easy and fast with SmartXchange.

—Yael Li-Ron

For more information about all these tools, select reader service number 917.

You'll have to search the galaxy to find a more realistic multimedia experience than this.

There's not much doubt that intelligent life forms exist somewhere else in the universe. The question is: Are their multimedia systems as advanced as ours?

The new **Sound Blaster 8x Kits** make your current multimedia system seem like something out of a history book. They give you a brain-blistering 8x CD-ROM drive that makes all your CD-ROM software perform at warp speed. The 8x drive uses an IDE interface and is compatible with multiple standards including Photo CD and CD EXTRA.

You also get one of the hottest sound cards on the planet — the Sound Blaster 32 PnP. It delivers the brilliant realism of **32-note polyphony** and **wave-table synthesis**, adding new detail and richness to both sound effects and music. It also features Creative's **3D Stereo Enhancement Technology** to make your whole system sound better.

Since the search for bargains is universal, a fat collection of the hottest new games and software comes with every kit. Sound Blaster Performance 8x is designed for the multimedia fanatic. Sound Blaster Discovery CD 8x takes the whole family to the cutting edge. Both come with a pair of Sound Blaster speakers powerful enough to attract low-flying spacecraft. If you're looking for the ultimate CD-ROM upgrade, Blaster CD 8x gives you mach speed and great software to boot.

Great software value in every kit

So the next time you see aliens from your window, just point them to the nearest Creative Labs dealer. Think of it as a way to promote harmony in the universe.

Introducing Sound Blaster 8x Multimedia Upgrade Kits

	CD-ROM	Speakers	Sound Card					
	CD-ROM Drive	Stereo Speakers	Play Audio CDs and Games	Record 16-bit audio	Wave-Table Synthesis	32-Note Synthesizer	128 Real Instrument Sounds	3D Stereo Enhancement
Typical Multimedia System	4X							
Sound Blaster Multimedia Kit	8X							

CREATIVE
CREATIVE LABS, INC.
http://www.creativelabs.com

Circle 54 on reader service card

For more information call our Faxback Service at 405-372-5227 or Customer Service at 800-998-5227 x134 © 1996 Creative Technology Ltd. Sound Blaster and Creative Labs are registered trademarks and the Sound Blaster Compatibility logo, Sound Blaster Performance, Sound Blaster Discovery CD and Blaster CD are trademarks of Creative Technology Ltd. All rights reserved.

A BETTER 3 YEAR SERVIC
YOU HAVE OUR WORD

NEXT-BUSINESS-DAY AT-YOUR-DESK SERVICE GUARANTEE*

If your Dell system experiences a covered hardware failure while it is under a next-business-day, on-site service contract purchased from Dell, and if Dell has dispatched a service call before 5:00 PM local customer time, Monday through Friday, a technician, if needed, will arrive at your location to address your problem by the end of the next business day. In the rare event that the technician does not arrive as promised, let Dell know. Your situation will receive top priority for resolution, plus you will receive an additional month of service for free.

GUARANTEED

PROGRAM? ON IT.

DELL DIMENSION™ XPS Pro150n
150MHz PENTIUM® PRO PROCESSOR
- Mini Tower Model
- 16MB EDO Memory
- 256KB Internal L2 Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS® Office Professional with Bookshelf for Windows® 95
- Microsoft® Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty†
- ★ *Upgrade to the Imagine 128-bit Graphics Accelerator with 4MB VRAM for only $330 more.*

$2899
Business Lease◊: $107/Mo.
Order Code #500259

DELL DIMENSION XPS P133c
133MHz PENTIUM PROCESSOR
- Mini Tower Model
- 16MB EDO Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 6X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty
- ★ *Upgrade to 32MB of EDO memory for only $399 more.*

$2199
Business Lease: $81/Mo.
Order Code #500252

***NEW* DELL DIMENSION XPS P166s**
166MHz PENTIUM PROCESSOR
- Mini Tower Model
- 16MB SDRAM Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Integrated Sound Blaster 16 Sound
- Altec Lansing ACS-5 Speakers
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty
- ★ *Upgrade to the Dell 17LS (15.7" v.i.s.) monitor for only $270 more.*

PICTURED SYSTEM

$2549
Business Lease: $94/Mo.
Order Code #500254

DELL DIMENSION P100t
100MHz PENTIUM PROCESSOR
- Mini Tower Model
- 8MB EDO Memory
- 850MB Hard Drive [12ms]
- 14XE Monitor (13.19" v.i.s.)
- 64-bit PCI 1MB DRAM Video
- 4X Multi-session EIDE CD-ROM Drive
- Microsoft Windows 95/30 Days Free Support/Dell Mouse
- 3 Year Limited Warranty
- ★ *Upgrade to 16MB of EDO memory for only $139 more.*
- ★ *Upgrade to a 1.6GB hard drive for only $100 more.*
- ★ *Add a 3Com EtherLink III Network Interface Combo Card with Parallel Tasking for only $99 more.*

$1449
Business Lease: $54/Mo.
Order Code #500250

If you are looking for a better service program, we have one word for you: guaranteed. At Dell, we guarantee that if there's a problem with your Dell Dimension, a Dell-certified technician will be at your desk the next business day, servicing your PC. And in the rarest of events that we're not there the next day, you get an extra month of service at no charge.

It's all part of our new and improved standard service program that covers your Dell Dimension PC for 3 full years. Including one year of Guaranteed Next-Business-Day, On-Site service△ the first year, and then two additional years of Next-Business-Day Parts Delivery.

3 YEAR WARRANTY

So call today and get covered by the Dell Service program.

DELL®

TO ORDER, CALL

800-678-8649

In Canada*, call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/

Keycode #03135

Dell's featured computer artist is Daniel Fenelon.

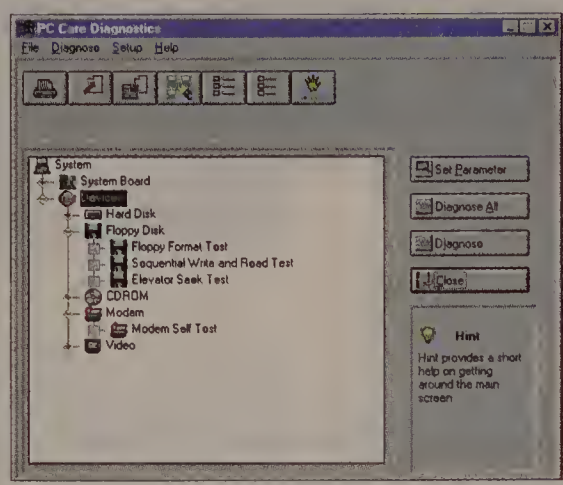
*Guarantees available in the U.S. only for registered owners of Dell Dimension systems purchased after 8/1/93. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., 2214 W. Braker Lane, Suite D, Austin, TX 78758. △On-site service provided by BancTec Service Corp. On-site service may not be available in certain remote locations. ◊Business leasing arranged by Leasing Group, Inc. ★Prices and specifications valid in the U.S. only and subject to change without notice. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. MS, Microsoft, Windows and the Windows logo are registered trademarks of Microsoft Corporation. ©1996 Dell Computer Corporation. All rights reserved

intel inside pentium PROCESSOR

Designed for Microsoft® Windows®95

and a crash-protection feature that promises to intercept and correct system crashes and General Protection Faults before you lose your work. Promises, promises.

First Aid 95's "fix-it" module worked perfectly: It noticed the misplaced .dll and moved it right back where it belonged. But that concludes the good-news portion of this report. The performance tune-up had no effect. And the crash-protection routine was a total flop: We engaged it, and then induced Microsoft Office to crash by repeatedly floating and unfloating its toolbar. First Aid 95 did nothing to help: Office crashed, and we lost our work. End of story.



PC CARE'S INTERFACE is a bit confusing, and selecting specific tests and parameters does not always work the way you'd expect.

Norton Diagnostics (Norton Utilities)

PROS: Norton Utilities includes other useful utilities, such as Disk Doctor, Speed Disk, System Doctor, and others

CONS: Fails to identify IRQ error, tune-up doesn't improve performance

The diagnostics module of Norton Utilities (Diags) tests all your hardware from motherboard to modem and looks over your setup and start-up files too. Then, supposedly, it tells you what's what. Supposedly.

All we got from the floppy drive test was a message saying, 'A formatted floppy was not found!' Yeah, sure. And Diags reported no problems when we ran Interrupt Configuration or IRQ Status diagnostics.

The closest we got to useful information was the vague message 'Error on COM 3' when we tested the modem. But given Diag's A-OK report on the IRQs, it was virtually impossible to identify the true problem.

PC Care for Windows 95

PROS: Nice animations

CONS: Fails to identify hardware problems, buggy interface, tune-up doesn't improve performance

PC Care comes with eye-boggling animations that make boring test routines almost as exciting to watch as an Intel Inside commercial. Novices will probably appreciate this extra touch, but the entertainment loses its appeal by the 15th time (don't ask how we know this), and then the party's over and you're left with a headache.

PC Care includes a generous grab bag of utilities: hardware diagnostics, disk clean-up, performance tune-up, even a bare-bones uninstaller. But once again, the tune-up is useless. How about the diagnostics? The floppy drive test told us it was inaccessible. We already knew that. And testing for IRQ conflicts was a roller coaster ride. First the program told us that COM1 and COM3 had passed interrupt and I/O tests perfectly. Later it said 'Unable to open COM3' and at the same time insisted that both COM1 and COM2 had failed the interrupt ID tests. Oh, great!

WINCHECKIT FIGURED OUT THERE WAS AN IRQ PROBLEM with our modem, which is more than any other diagnostic utility did.

WinCheckIt 4

PROS: Finds IRQ problem with modem, detects hardware and configuration changes since last session

CONS: Fails to provide useful information, tune-up doesn't improve performance

WinCheckIt 4 memorizes your system setup, so if something was working last time you booted up and it's not working today, you know who to blame. Although WinCheckIt flopped the floppy drive problem (all it told us was 'Invalid or no media'), and was unable to diagnose the IRQ problem, it came pretty close. Initially it reported finding no modem. When we forced it to test the modem, it found an IRQ error and complained that it was 'unable to determine modem's IRQ'. When we ran its Advanced Data Collection routine, it reported no problems with IRQ or DMA. Sigh.

WinCheckIt comes with almost the same set of extras as PC Care: hardware diagnostics, disk cleanup, performance tune-up, and a simple uninstaller.

WinProbe4

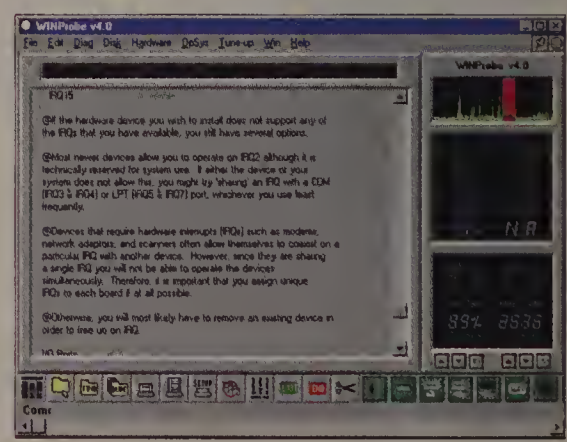
PROS: Flashy display, lots of ancillary utilities

CONS: Fails to identify hardware problems, tune-up doesn't improve performance

WinProbe's main screen looks like the control panel in Buck Rogers' rocket ship: It's packed with dials, displays, push buttons, and readouts, all rendered in bright primary colors. Once your eyes adjust, you'll discover a huge set of utilities: uninstall, tune-up, disk cleanup, CD Certify, an .ini file editor, and a gratuitous copy of Mosaic.

And then there are hardware diagnostics, none of which proved very useful. Checking the floppy drive, we learned only that WinProbe was 'unable to access drive'. Right. Neither could we. Communications Diagnostics found no problems on COM1 or COM2, and no COM3 at all. The Hardware Installation Wizard showed no IRQ or DMA conflicts. Network Information reported all systems go on the (inoperative) ethernet board. In short, aside from the inaccessible floppy, the ailing computer was in perfect health as far as WinProbe was concerned.

For more information about all these diagnostic utilities, circle reader service no. 918.



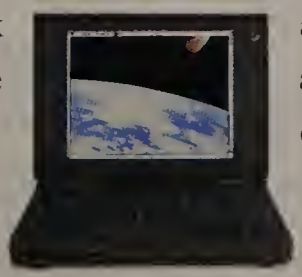
WINPROBE PROVIDED LOTS OF THEORETICAL INFORMATION about IRQ conflicts but nothing specific to our IRQ problem.

By now, over a million geniuses have probably told you which computer to buy.

To find out if any of them are right, give us a call.

Rated one of the best in customer service.[1]

Everybody has an opinion. Follow the wrong one and it could cost you big bucks. So enough with the confusing, conflicting advice. Pick up the phone and call IBM. Tell us the kind of work you do and we'll recommend an affordable solution ideally suited to the job, and put you in touch with one of our expert IBM Business Partners who can help you implement it. Whether you need a single desktop or you're looking to integrate your entire network, all our solutions come backed by 24-hour-a-day, 7-day-a-week telephone support.[2] So call us today. Because it doesn't take a genius to know that if you're looking for technical solutions, there's no better place to find them than at IBM.



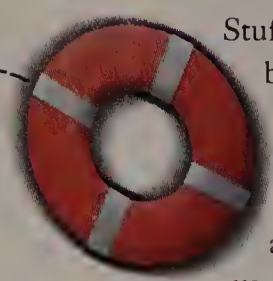
IBM

Call IBM for more information 1·800·426·7255, ext. 4603

We're open 8am–10pm Monday–Friday, 9am–5pm Saturday (Eastern Time).

(1) PC Magazine 7/95 (2) Excludes some holidays. IBM is a registered trademark of International Business Machines Corporation. © 1996 International Business Machines Corporation.

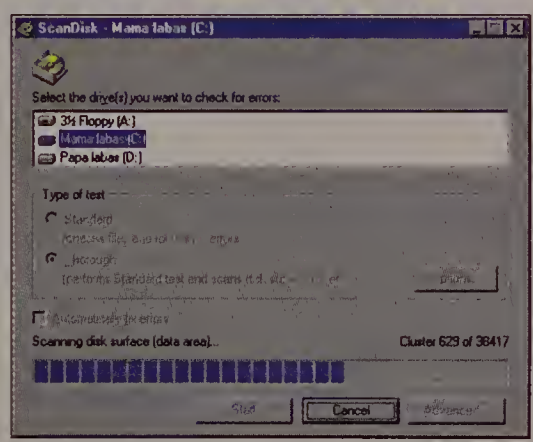
RECOVERY



Stuff happens, even with 32 bits. As sure as Murphy has a law, you'll be afflicted with disasters such as cross-linked files and damaged boot sectors. And all of us have accidentally deleted files, even entire subdirectories, that we wish we hadn't.

So what? There are plenty of sharpshooting utilities to protect you from these digital delinquents, right? Well, yes, but you're running Win 95, with its 32-bit file system. Use one of those old 16-bit disk repair utilities, and you can kiss your data good-bye.

Windows 95 comes with its own hired gun, ScanDisk, designed to protect your disk from common problems and to run happily in a 32-bit environment. And the Recycle Bin lets you rescue deleted files. Symantec offers the only third-party alternatives: Disk Doctor, Protect, and other recovery modules, built into Norton Utilities for Windows 95, which vanquish the same foes more effectively.



THE SCANDISK UTILITY that's built into Windows 95 seeks out and repairs most significant hard disk problems.

So who you gonna call? In the face of garden-variety disk danger, you can call either of these utilities to get help. Both can find and fix lost clusters, repair problems in the file allocation table, check out the file system, and scan the hard disk surface. Cross-linked files? Both ScanDisk and Disk Doctor attempt to untangle them. Both can repair compressed drives (as long as the compression utility is DoubleSpace or DriveSpace). And both are reasonably painless to use. But once you leave Dodge City and push on into the badlands of serious data disaster, you'll want Norton Utilities for Windows 95 riding shotgun.

NORTON DISK DOCTOR can cure some ailments that ScanDisk can't—and it's a true 32-bit app.

ScanDisk (Windows 95)

PROS: Free

CONS: Lacks advanced recovery features

When it comes to diagnosing and repairing basic disk problems, ScanDisk is right on target. It even boasts two victories over its foes: It uses write-testing in its disk surface analysis, providing the most reliable information; Disk Doctor's read-only surface test can't compare. And ScanDisk won't cost you any extra money.

For your ordinary disk debacle, ScanDisk is all you need. For more serious disasters, such as boot record robberies or partition table hijacks, call out the Norton Disk Doctor.

Norton Disk Doctor (Norton Utilities)

PROS: 32-bit app, better performance

CONS: No write-testing

Norton Disk Doctor has been around for a decade, and it just gets better. ScanDisk pales in comparison: NDD repairs boot-record problems; ScanDisk doesn't. NDD will heal a sick partition table; ScanDisk won't. If the Doc finds a pair of cross-linked files, it fixes both; ScanDisk fixes one, dumping the other. And our tests found that NDD is better at repairing files. Finally, NDD is a true 32-bit application, which makes it more stable than the 16-bit ScanDisk. And Norton Utilities has more tools. When it comes to file recovery, Norton Utilities trashes Win 95's Recycle Bin, which can rescue only files that were deleted by being dragged to the Bin. Norton's Unerase wizard works with the Recycle Bin to recover *all* deleted files. Meet the top gun.

For more information about all the recovery utilities in this section, circle reader service no. 919.

Michael Goodwin is the author of Making Multimedia Work *(IDG Books, 1995, 415/655-3000). Yael Li-Ron is a* PC World *senior associate editor and coauthor of* Windows 95: Making it Work for You *(ZD Press, 1995, 800/858-7674).*

WHERE TO BUY

- **CleanSweep 95** $28, **WinProbe 4** $44, **QEMM 8** $69; Quarterdeck, 800/683-6966, 310/309-3700 **Reader service no. 667**
- **Dashboard 3.0** $49, Starfish Software, 800/765-7839 **Reader service no. 668**
- **Dr. Solomon's Anti-Virus ToolKit for Windows 95** $95, S&S Software, 800/701-9648 **Reader service no. 669**
- **First Aid 95** $45, CyberMedia, 800/721-7824, 310/843-0800 **Reader service no. 670**
- **IBM AntiVirus** $45, IBM, 800/426-2966
- **Keyview** $35, FTP Software, 800/282-4387 **Reader service no. 671**
- **LapLink for Windows 95** $145, Traveling Software, 206/483-8088 **Reader service no. 672**
- **Microsoft Plus** $49, **Windows 95** $89; Microsoft, 800/426-9400 **Reader service no. 673**
- **Norton Antivirus** $75, **Norton Utilities for Windows 95** $119; Symantec, 800/441-7234, 503/334-6054 **Reader service no. 674**
- **PC Care for Windows 95** $35, American Megatrends, 800/828-9264, 770/246-8600 **Reader service no. 675**
- **PC-cillin 95** $50, Touchstone Software, 800/531-0450 **Reader service no. 676**
- **PowerDesk** $49,**Uninstaller 3.5 for Windows 95** $45; MicroHelp, 800/777-3322, 770/516-0899 **Reader service no. 677**
- **Qualitas Max 8** $42, Qualitas, 800/733-1377, 301/907-6700 **Reader service no. 679**
- **Remove-It for Windows 95** $35, Vertisoft, 800/466-5875, 415/956-5999 **Reader service no. 680**
- **Stacker 4.1** $55, Stac, 800/522-7822, 619/794-4300 **Reader service no. 681**
- **ThunderByte Anti-Virus Utilities** $69, ThunderByte Corp., 800/667-8228 **Reader service no. 682**
- **VirusScan** $45, McAfee, 408/988-3832 **Reader service no. 683**
- **WinCheckIt 4** $45, Touchstone Software, 800/932-5566, 714/969-7746 **Reader service no. 684**
- **WinZip** $29 (shareware), Nico Mak Computing, http://www. winzip.com **Reader service no. 685**

For more information about all products in this article, circle reader service no. 920.

NOTE: OUR FAMILY HERITAGE.

As you'd expect, our JetDirect print servers are chips off the HP block. So quality and reliability are givens. And so is full compatibility with HP printers, new and old. On virtually any network.

But did you know how well our print servers manage all your printers? Even the ones we don't make.

Easy set-up. Monitoring. Trouble-shooting. Remote management.

What else would you expect? We live and breathe network engineering.

For detailed specs, visit http://www.hp.com/go/network_city. Or call 1-800-533-1333, Ext. 1615.

©1996 Hewlett-Packard Company RND053

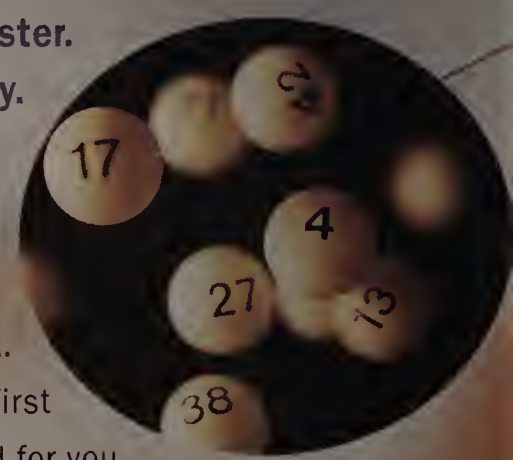
HEWLETT® PACKARD

to see answers where others only see numbers

Microsoft Excel for Windows 95.

Now you can see numbers from any angle. List them, chart them, sort them in ways that simplify analysis, that reveal the answers you need. With Microsoft® Excel, you can use AutoCalculate to find the sum, average, count, minimums, or maximums of specific cells simply by highlighting them. (You no longer create scratch formulas every time you need an answer.) To spot geographically based trends and relationships, use the mapping capabilities of Microsoft Excel to analyze sales by territory, for example. PivotTable® views let you rearrange the headings inside your spreadsheet to get a new view of your data. If you want to view revenues by product instead of by region, simply move the "product" heading and the entire table adjusts. And for people who value the different perspectives different people can offer, Microsoft Excel now lets multiple users enter and edit data in the same worksheet at the same time.

Everything from recalculations to pivot tables is faster. Routine tasks now happen automatically.



Answers appear in record time because formula recalculation, charting, cutting, pasting, and database operations are faster than ever. Up to 70% faster. And now that the software can sense what you are doing and complete the process for you, fewer steps are required to complete a task. AutoComplete, for example, speeds data entry by recognizing the first few letters of a repetitive entry and automatically finishing the word for you. Using the Template Wizard can help you get a head start on your work by turning existing spreadsheets into templates and by setting up an automated system to track important fields in a separate database. Nothing slows you down, not even questions. To find out the best, quickest way to do something, you ask the Answer Wizard. "How do I get this page to print sideways?" Type in the question and the Answer Wizard will show you how.

Microsoft®

WHERE DO YOU WANT TO GO TODAY?™

Designed for Microsoft® Windows 95

To see an autodemo and more, go to http://www.microsoft.com/msoffice. Or call 800-426-9400.

©1995 Microsoft Corporation. All rights reserved. Microsoft, PivotTable, Windows, and the Windows logo are registered trademarks and the Windows Start logo and *Where do you to go today?* are trademarks of Microsoft Corporation.

The walls are now down between applications. It's easier to share data across applications.

By improving integration with Microsoft Access, you can now share tools across both applications. You can borrow Access Forms and Reports to simplify data entry, and to create group reports and mailing labels from your Microsoft Excel list. You can use PivotTable views in Microsoft Access to see data from different angles. Choose the Convert to Access command, and the software will automatically turn spreadsheets into true relational databases. It eliminates the guess work by creating the relational tables for you. And you can move or copy data effortlessly across worksheets and workbooks, to the desktop, or to other apps by using advanced drag and drop tools. Microsoft Excel. Now it works the way you want to work, at the speed you want to work.

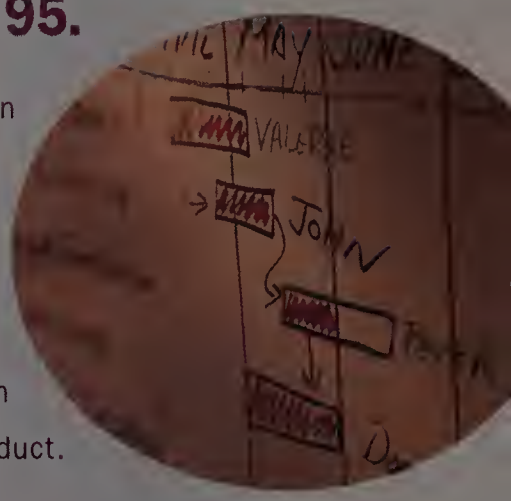
Start™

Now you can take full advantage of Windows 95.

Microsoft Excel is designed to work hand-in-hand with the 32-bit performance, advanced multitasking, and simplified user interface of the Windows® 95 operating system. To integrate seamlessly with the Microsoft Office suite of applications for Windows 95. Together, they make computing fundamentally easier. They make it easier for you to focus on your work, not on your software.

to guide
your project down a clear path

Microsoft Project for Windows 95.



Now you can manage projects more simply, more smoothly, by communicating project information as it occurs. With Microsoft® Project you can convey project status quickly and effectively so your boss, customers, and coworkers are always in the loop. From sharing task deadlines and responsibilities, to letting people know about changes and the impact they'll have on the deadline, you have the tools to organize your projects into manageable steps and keep them moving in the right direction. Microsoft Project unlocks the doors of communication and gives you the power to navigate the most efficient route to a successful end product.

Graphical views let teammates visualize where the project is going.

With Microsoft Project you can display project data in ways that everyone can understand. Great-looking Gantt Charts integrate text, timelines and graphical bars so everyone can see start and finish dates, interdependencies and task assignments. Throughout your project, you can also use a Monthly Calendar report to share your plan in a format that's clear and easy to read. And since Microsoft Project shares many of the same key commands with other Office applications, it will be easy to create schedules and reports. But if at any time you need help, type in a question and the Answer Wizard gives you the information you need. Microsoft Project helps you illustrate every phase of your project so you and your team keep your goals in sight.

Microsoft®

WHERE DO YOU WANT TO GO TODAY?™

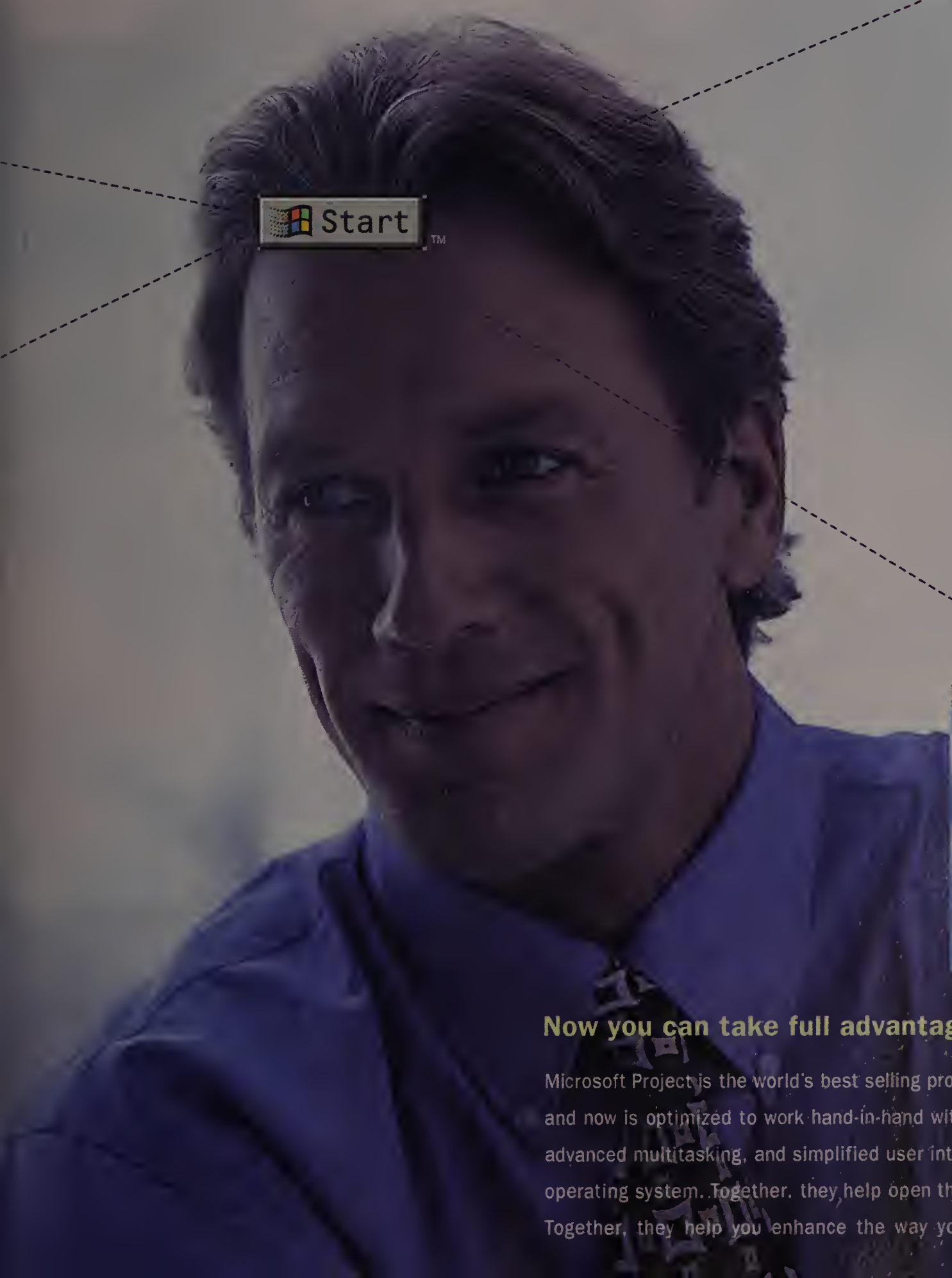
Designed for Microsoft Windows 95

To see an autodemo and more, go to http://www.microsoft.com/msoffice. Or call 800-426-9400.

*Microsoft Project works with Microsoft Mail, cc: Mail,™ Lotus Notes® and the Microsoft Exchange Inbox for Windows 95. © 1995 Microsoft Corporation. All rights reserved. Microsoft, Windows, and the Windows logo are registered trademarks and the Windows Start logo and *Where do you want to go today?* are trademarks of Microsoft Corporation. cc: Mail is a trademark of cc: Mail, Inc. a wholly owned subsidiary of Lotus Development Corporation. Lotus Notes is a registered trademark of Lotus Development Corporation.

Keep everyone moving on the same track with open lines of communication.

Microsoft Project is completely integrated with a wide range of e-mail systems* and Schedule+ so that with a single click, changes and additions are immediately distributed to and from teammates. Assignments, task changes, and progress can be communicated and updated without ever reentering information, so you save time and eliminate mistakes. And because Microsoft Project is a member of the Office family, sharing data between programs is easy. For example, you can start building a schedule by simply dragging a task list out of Microsoft Excel and dropping it directly into your Microsoft Project plan. You keep communication clear and information consistent and your project continues to move exactly the way you planned.



Now you can take full advantage of Windows 95.

Microsoft Project is the world's best selling project management software and now is optimized to work hand-in-hand with the 32-bit performance, advanced multitasking, and simplified user interface of the Windows 95 operating system. Together, they help open the lines of communication. Together, they help you enhance the way you manage your projects.

How New Is

Your New PC?

We all know how to tell a new car from a used one: You check the odometer. If it reads more than a few miles, then you know the car's been around the block—and not just for a test drive.

But what about PCs? What tells you that the computer you just paid $2500 for is brand-new? The sealed boxes? The squeaky-clean case and shrink-wrapped documentation? Sure, those are all pretty good indications that a PC is factory fresh, but they are no guarantee that your new computer and all its components are as new as that unopened user's manual.

Returned PCs—or components salvaged from returned computers—find their way into the hands of customers all the time. This so-called recycling happens at every step of the PC food chain. Retail stores may resell a returned computer rather than go through the hassle of shipping it back to the manufacturer. And although many stores identify these PCs as used and discount the price, others resell them as new. Distributors might repackage returned computers they receive from one store, then ship them out as "new." Although they aren't eager to discuss it, PC companies large and small often disassemble returned computers, then retest and reuse some of the high-ticket components in the assembly of "new" PCs.

Unless a computer actually shows visible signs of use—a dirty monitor or case, or a hard drive with more than just the bundled software on it—consumers have no way of knowing the history of their new PC. It's particularly tricky when it comes to the reuse of internal components. Even consumers who pop open the case to tinker with the machine's insides are probably not going to be able to tell the difference between a used hard drive or CPU and a new one, since they all look virtually identical.

So does it matter? You bet it does. First of all, looks can be deceiving. Previously used components may have been handled improperly or exposed to electrostatic discharge—either of which can reduce the efficiency of hard drives or CPUs or result in premature failure of these components. Besides the technical issues, there's the larger issue of deception. Whether your new PC includes a single reused component or the entire unit was returned and resold, you have a right to know what you're buying—and whether it's been owned or used before.

GEOFFREY NELSON

Computer companies often use old parts in new PCs. Does this little-known practice affect your PC's performance or reliability? Maybe. Do you have the right to know about it? You bet!

By Roberta Furger

'Compaq said they didn't reuse components; maybe that's the case. But if they didn't, they were the only company that didn't.'

Dragged out of the Closet

Component recycling has long been a closeted secret of the PC industry. Almost everyone did it but no one talked about it, says Marshall Grossman, attorney for Packard Bell. The Sacramento, California, leader of PC retailing became embroiled in controversy in April 1995, when it was sued by rival Compaq for allegedly failing to disclose to customers that its new PCs might include used parts (see "Compaq Sues Packard Bell," *Breaking News*, June 1995).

That lawsuit set off a chain reaction: Packard Bell owners in nine states filed class action suits, which settled out of court last August; 22 state attorneys general and the Federal Trade Commission launched investigations into industry practices; and PC companies and stores have begun tightening their previously liberal return policies in an attempt to stem the problem at its source (see "Retailers Resist Returns"). The issue is unlikely to be resolved anytime soon.

Although Packard Bell has taken most of the heat, it's not the only company to cannibalize returned PCs and then retest and reuse the most expensive components in new computers. Roughly one-half of the PC companies that responded to our inquiries acknowledged having done so. (For a list of recycling policies of major PC vendors, see "Who Recycles Components?") Besides Packard Bell, Acer, Diamond Technologies, DTK, Netis, Polywell, Quantex, and Tri-Star Computers say they may reuse components in the assembly of new computers—typically from PCs returned within their 30-day money-back guarantee period. Until fairly recently, Dell and USA Flex reused components. Both companies discontinued the practice last summer, at the height of the Packard Bell/Compaq feud.

Though it's stopped recycling components, Dell remains tight-lipped about its practices and why it changed its policy. Spokesperson Jill Shanks explains: "We consider the motivations and details behind that decision to be competitive information and prefer not to discuss it publicly."

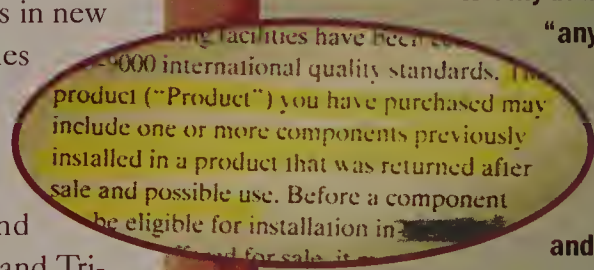
Mark Van Scoter, product marketing manager for USA Flex, is more forthright about why his company stopped recycling components. "We didn't have any rigid policies," says Van Scoter. "Systems were evaluated when they came back; if it was contemporary, we considered it reusable.

"When Compaq filed that suit, everyone had to reevaluate what they were doing," Scoter notes. "Compaq said they didn't reuse components; maybe that's the case. But if they didn't, they were the only company that didn't."

Spokespersons for AST, Compaq, Gateway 2000, and HP all say that their companies have never reused components from returned PCs. Warranties that come with Digital and IBM PCs state that the units might include serviceable used parts, but representatives for both companies say the clause is misleading. According to Art O'Donnell, vice president of quality and services in Digital's personal computer business unit, the disclosure in the warranty is a "protection clause" so the company is covered "in the event we should [reuse] refurbished parts." He adds, though, that it "seldom happens." IBM, for its part, says the clause in its warranty that discusses reuse of parts refers only to refurbished PCs, which are marked as used. "We have one standard brochure for both our new and refurbished products," says IBM spokesperson Michael Reiter.

With Computer Warranties,

When you send your computer equipment in for warranty repairs, don't be surprised if it comes back with reconditioned parts. It's all there in your warranty's small print. Gateway's Parts Only Limited Warranty states that "any replacement parts/products shall be new or *serviceably used*" (italics added). A similar policy by Sony for its monitors and CD-ROM drives says that it "will supply, at no charge, new or *rebuilt replacements* in exchange for defective parts."


facilities have
000 international quality standards.
product ("Product") you have purchased may
include one or more components previously
installed in a product that was returned after
sale and possible use. Before a component
be eligible for installation in

Warranty Shell Games

Bob Conover, a Delta Airlines pilot from Marietta, Georgia, needed a microscope to decipher his warranty. He shipped back his new monitor to Gateway after only eight hours of use. They sent him a replacement, and he identified it as reconditioned straightaway because of a sticker on the product. What's more, monitor number two was stained, and it didn't work any better than the original one.

"It wasn't fair that these guys substituted a reconditioned one for a new one. I want a new one. I paid for a new one!" Conover says. He contacted Gateway's Customer Satisfaction Group and insisted on getting a brand-new monitor. "It took a lot of phone calls, but I got what I wanted within a week."

Several vendors state quite clearly that in-war-

Some policies are still in a state of flux. When first asked, a Zenon representative said the company reuses some components. At press time, however, Zenon suddenly indicated that it had changed its policy. Other companies just won't talk about it. When asked to describe how it processes PC returns and whether it reuses any components, NEC Technologies refused to comment.

High return rates—particularly of PCs sold through retail stores—are driving the recycling of components. Most stores allow consumers to return a PC for a full refund, typically with no questions asked. And many buyers are taking advantage of these liberal policies. "High return rates take a product line that goes out the door profitable and turn it into one that's delivering red ink," says Dennis Cox, AST's vice president of U.S. consumer sales.

Just about everyone is looking for ways to reduce returns—or recoup the costs. For some companies, that means reusing components from returned products. "Returns are high, and the margins are thin," says Matt Sargent, PC analyst with Computer Intelligence, a market research firm in La Jolla, California. "The inventory is worth a ton of money; they can't just dump this stuff," he adds.

A Conspiracy of Silence?

For a time at least, it looked as though consumers would get a firsthand glimpse at the recycling practices of several major PC companies and distributors. Packard Bell, in its defense against the Compaq suit, argued vehemently that recycling was common among all major companies—and

verything New Can Be Old Again

ranty repairs will be handled with reconditioned components most of the time. Gus Kolias, vice president of customer service at Compaq, says some of the spare components will have to be brand-new initially if the product is market fresh. All used components are routinely tested to the same standards as new parts, he says. "This includes component testing; but it also involves picking parts out of the inventory to build up a computer. We test at the parts level and at the system level."

What's the Big Deal?

The parts that typically get reconditioned are hard drives, floppy drives, system boards, monitors, and power supplies—anything that is repairable. Mice, keyboards, and cables are unlikely to be previously used. To the end user, vendors would argue that there's no difference between a remanufactured part and a new one. "Remanufactured parts are the functional equivalent of new parts when they leave manufacturing," declares Kolias. "In fact, a remanufactured part wouldn't fail any more frequently than a new one."

Replacing PC parts with reconditioned ones is not exactly popular with consumers who are aware of the practice. Walter T. Lourie, a sales manager in Chicago, had problems with his Dell notebook's hard drive. "They wanted me to accept a remanufactured unit backed by a 90-day warranty. I was not happy with this. Dell said it was within their rights to offer me a comparably configured machine. My objection was that I wouldn't know the repair history of the other unit, and if I'd wanted a used system, I would have bought one. I wanted a new unit, but they didn't leave me with much choice."

Lourie did not give in. He wrote to *PC World's Consumer Watch,* and Dell eventually agreed to accept the return as credit for a new system. "It was interesting anyway. After probing and questioning, I discovered that using refurbished parts in my kind of situation was quite normal," says Lourie.

What You Can Do

Our advice? Check your warranty. Most vendors usually reserve the right to replace your defective part with a reconditioned one. If you're not comfortable with this practice, ask questions and speak up. After all, *you're* paying for it. You can return computer equipment to the top retailers and mail-order merchants, usually for any reason, under their surprisingly generous return policies. But make sure to return the equipment as it was originally packaged. Missing packing material or parts will cost you. —Aoife McEvoy

'It wasn't fair that these guys substituted a reconditioned monitor for a new one. I want a new one. I paid for a new one,' complains Delta Airlines pilot Bob Conover about his Gateway 2000 monitor.

intended to demonstrate that fact at the trial. To that end, it reviewed records and questioned executives at Acer, Apple, AST, Compaq, Gateway, Dell, and Zeos. Those records are all sealed by the court and therefore unavailable for public inspection. But Packard Bell attorney Grossman says his inquiries showed that "most major PC manufacturers engage in some recycling of components from previously returned products. The one glaring exception is Apple," says Grossman, "which apparently does not engage in any recycling." Packard Bell also had charged that Compaq's distributors reboxed PCs returned to one store, then shipped them out as new. Compaq has denied the charges.

But before these practices were discussed in public, Packard Bell and Compaq settled out of court. After months of volleying accusations back and forth, after thousands of hours of depositions from everyone from PC company executives to distributors to retail store personnel, the parties agreed to end their dispute out of the public eye just days before their trial was to begin. Although the precise terms of the Compaq suit's settlement have not been made public, attorneys for both companies confirm that there was no exchange of money, no commitment by either party to change its practices, and no guidelines established as to what constitutes new and used.

Why would such bitter rivals decide to call off the fight at the eleventh hour? Packard Bell attorney Marshall Grossman contends that Compaq "raised the white flag of surrender" because of its "fear of being publicly embarrassed," a charge that Compaq steadfastly denies. "Compaq is and has been proud of its practices," says its attorney William Coston. "Nothing Packard Bell could have done would have tarnished our good reputation." According to Coston, Compaq settled because the judge had informed both sides that he could take up to eight months to make a decision in the case. "Given that delay, we thought it was prudent to let the regulatory agencies take the lead," says Coston, referring to the investigations underway by the FTC and numerous state attorneys general.

Some industry observers speculate that neither Compaq nor Packard Bell wanted to be responsible for exposing the practices of the PC industry to the scrutiny of a public trial. "In the final analysis, we're not going to find out who does what," observed one industry analyst. "If it [reuse of parts] is really that widespread, it wouldn't be surprising if part of Compaq's reasoning for getting out of the suit was that it didn't want to sully the entire industry." Indeed, at the pretrial hearing last February, Judge Roderick R. McKelvie cautioned attorneys on both sides about the dangers of seeing the case through to trial.

Surprise Packages

Because of its legal wrangles, Packard Bell has been the most public about its recycling practices and has offered details that no other computer company has disclosed. According to attorney Grossman, every returned Packard Bell computer—even those that appear to be unopened—is disassembled. "Components are retested, and only those that test as good or better than new are reused," explains Grossman.

As part of last August's settlement of the consumer class action suits, Packard Bell agreed to limit component recycling to PCs that are returned within six months of the manufacture date and that have been turned on for 100 hours or fewer. (All Packard Bell PCs now include a meter that logs the time a PC has been turned on.)

Without industry standards or legal requirements, recycling practices seem to vary from one computer maker to the next. Typically, though, it's the high-ticket items that companies try to salvage: hard drives, motherboards, CPUs, graphics cards, and RAM. One small PC manufacturer said it reuses the case and even the monitor when it can. But because these components can easily show signs of use, that's not a common practice. On the other hand, mice and keyboards are almost always new because of their relatively low costs.

At most companies, used PC components go through rigorous testing and must conform to the same standards as new components before they are installed in a new system. Others, though, are less thorough in their testing. At a minimum, each company that admitted to using refurbished components said it reformatted hard drives. Some said they inspected motherboards and graphics cards and updated the BIOS or other chip sets as necessary to bring the com-

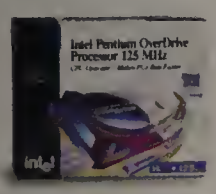
Who Recycles Components?

There's no way to tell if your new PC includes any reused components. Here's what leading vendors told us about their policies. We are unable to confirm this information independently.

Company	Reuse some components?
Acer America	Yes
Acma	No
AST	No
Austin	No
Compaq	No
Compudyne (CompUSA)	No
Dell	No as of summer 1995
Diamond Technologies	Yes
Digital	"Seldom happens"
DTK	Yes
Gateway 2000	No
Hewlett-Packard	No
IBM	No
Micron	No
NEC	No comment
Netis	Yes
Packard Bell	Yes
Pionex	No
Polywell	Yes
Quantex	Yes
Swan	No response
Tri-Star	Yes
USA Flex	No as of summer 1995
ZDS	No
Zenon	No as of March 1996

Introducing more kick for your Pentium® processor-based PC.

Upgrade your Pentium® processor-based PC with a Pentium OverDrive® processor.



The new Pentium OverDrive processor is an easy-to-install, single-chip CPU upgrade that gives you a performance increase of over 50% on a wide range of business software†. Like spreadsheets and presentation graphics, or operating systems like Windows*95.

Pentium OverDrive processors are now available for 60, 66, 75, 90, and 100 MHz Pentium processor-based PCs and, as always, for most Intel486™ processor-based PCs. All affordably priced.

So if more performance is your ultimate goal, call your local dealer or call FaxBack* at 1-800-525-3019, doc. #8739 for pricing and availability information. Or visit our new Web site.

► www.intel.com/procs/ovrdrive

PROUD PARTNER

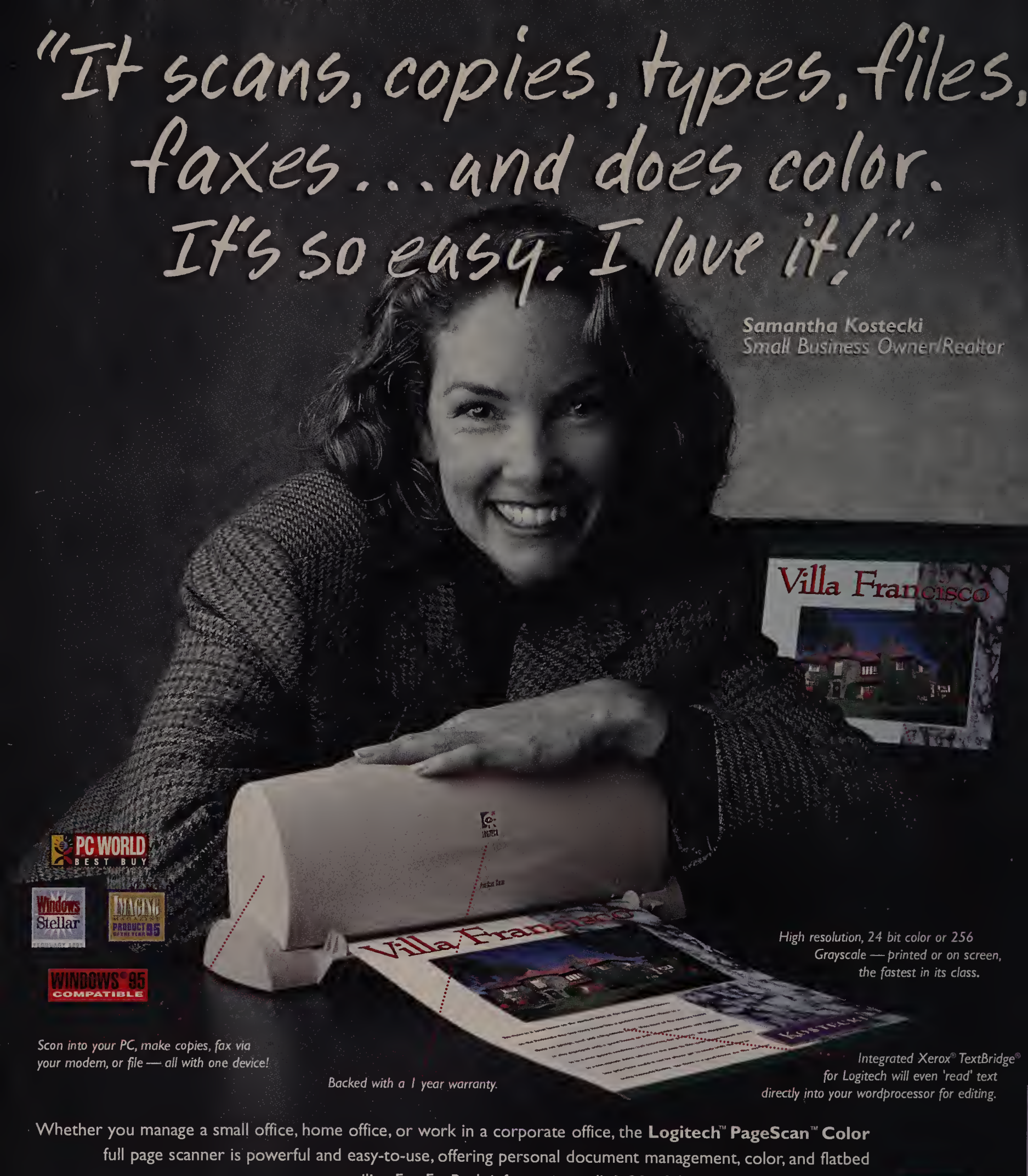
intel®

150 1846-1996 Smithsonian

© 1996 Intel Corporation. †Based on upgrading a 60 MHz Pentium® processor-based PC with a 120 MHz Pentium OverDrive® processor running a range of 16-bit productivity applications. *All other brand names are trademarks of their respective owners.

"It scans, copies, types, files, faxes...and does color. It's so easy. I love it!"

Samantha Kostecki
Small Business Owner/Realtor



PC WORLD BEST BUY

Windows Stellar

IMAGING PRODUCT OF THE YEAR 95

WINDOWS® 95 COMPATIBLE

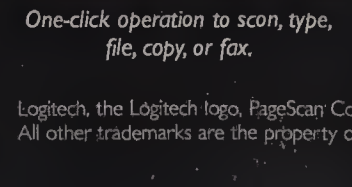
Scan into your PC, make copies, fax via your modem, or file — all with one device!

Backed with a 1 year warranty.

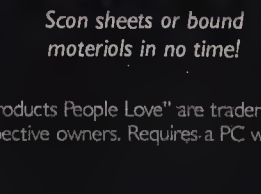
High resolution, 24 bit color or 256 Grayscale — printed or on screen, the fastest in its class.

Integrated Xerox® TextBridge® for Logitech will even 'read' text directly into your wordprocessor for editing.

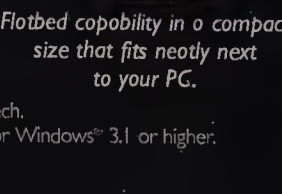
Whether you manage a small office, home office, or work in a corporate office, the **Logitech™ PageScan™ Color** full page scanner is powerful and easy-to-use, offering personal document management, color, and flatbed versatility. For FaxBack information call: **1-800-245-0000**, Document 4046. Or phone **1-800-889-0040** for more information.



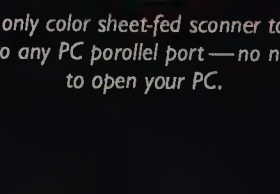
One-click operation to scan, type, file, copy, or fax.



Scan sheets or bound materials in no time!



Flatbed capability in a compact size that fits neatly next to your PC.



The only color sheet-fed scanner to plug into any PC parallel port — no need to open your PC.

LOGITECH

Products people love

Logitech, the Logitech logo, PageScan Color and "Products People Love" are trademarks of Logitech.
All other trademarks are the property of their respective owners. Requires a PC with DOS 3.3 or Windows® 3.1 or higher.

'Mixing new and used components throws your quality control a curve. It's like throwing a wrench into a bunch of cranks,' says Micron VP Gene Thomas.

ponent up to the same specifications as new components.

Regardless of how detailed their testing, just about every company we talked to insisted that reused components were no less reliable than their brand-new counterparts. "If you look at the failure rates of individual components, it's so low that you've got to wonder how used is used," says Scott Miller, PC analyst with Dataquest, a market research firm in San Jose, California.

Even some companies that don't reuse components admit that, for electrical components at least, the short time in which most of the PCs are in the field could almost qualify as extended burn-in (the period during which a PC maker runs a newly assembled PC to identify early problems). "For the electronic components, it could put them past their infant mortality stage, when they have a much greater chance of failing," says Ken Birch, vice president of strategic relations at Micron.

Does that mean Micron feels comfortable reusing components? No, says vice president of marketing Gene Thomas, citing both legal and technical issues that prevent them from doing so. "It's illegal to represent a product as new when it has been used," says Thomas, "and mixing new

Retailers Resist Returns

These days you can return almost anything—clothes, furniture, even computers. In most cases, retail stores and mail order firms have liberal 30-day return policies for hardware systems. This policy protects you from buyer's remorse, defective parts, whatever. And if retailers take back their goods with little hassle, you're more likely to shop with them again.

But computer hardware profit margins are paper thin, and both retailers and vendors do all they can to reduce the rate of expensive returns, which some say is about 10 percent of all systems sold. The heart of the problem is usually not defective computers, but finding the best PC for the customer. "For some customers, it looked easy in the store, then they get the computer home and haven't got a clue," says one Circuit City store manager.

"We're trying to think of anything to help reduce returns," says CompUSA executive vice president Larry Mondry. "Part of the issue is financial and part is satisfied customers. Obviously it's self-serving from the cost angle, but that's not the whole picture."

After you've made your decision, some stores, such as CompUSA and Best Buy, offer to send a store representative to your home to install your system for about $80. You won't get frustrated by cables and operating systems, and you'll be less likely to return the system.

Another approach is Circuit City's Answer City toll-free help line, available only to Circuit City customers. Technical support reps can access your profile, which includes all information about the computer you've purchased, plus digitized versions of the owner's manual and schematic designs.

Some retailers have departed from the industry standard of a 30-day grace period for returns (see chart at right). Best Buy recently cut back to 14 days. Incredible Universe (not on chart) allows only 5 days for returns, with receipt.

Although you can usually just return the computer with the receipt, if you don't bring back all the original packing material, manuals, or components, some stores will charge a restocking fee of as much as 15 percent of the purchase price. To protect yourself, check the policy before you buy. —Gabrielle Mitchell

Liberal Policies for Cautious Consumers

Usually you can return equipment to the top computer retailers and mail-order merchants for any reason under their surprisingly generous return policies. But make sure to return everything as it was originally packaged: Missing packing material or parts can sometimes cost you.

Store	Return period (days)	Restocking fee
Best Buy	14	depends on missing components
Circuit City	30	none
CompUSA	30	15 percent of price if any packaging or accessories are missing
Computer City	30	none; returns not accepted without all parts and original packing materials
Office Depot	30	none
Mail order		
Compaq	30-day money-back guarantee	none; customer pays return freight
Dell	30, from day PC is shipped	none; customer pays return freight
Gateway	30, from day buyer receives PC	none; customer pays return freight
IBM	30-day money-back guarantee	none; IBM pays return freight within 30 days
Micron	30, from day PC is shipped	none; customer pays return freight

'Personal computers don't wear out,' asserts Packard Bell attorney Marshall Grossman. 'They're replaced because of technological obsolescence.'

and used components throws your quality control a curve. It's like throwing a wrench into a bunch of cranks."

Not everyone agrees that mixing new and used parts degrades overall quality, however. In an expert statement filed last November as part of the Compaq suit, Homer Gee, Packard Bell's director of systems engineering, said he was prepared to testify that "Packard Bell's recycling practices have no negative effect on the life span, functionality, or reliability of semiconductors on boards recycled by Packard Bell. Packard Bell's practices result in more infant mortality failures being observed prior to shipment."

Packard Bell attorney Grossman adds, "PCs don't wear out...they're replaced because of technological obsolescence."

Like electronic components, hard drives are now manufactured to last longer than the average consumer will own the PC. According to leading drive manufacturers, today's hard drives are built for about five years of usable life. "After that point, there's some probability that the drive will exhibit signs of beginning to wear out," says Maxtor marketing manager Roger Reich.

Does that mean consumers shouldn't be worried about premature failure of recycled drives? Not necessarily, say both Reich and Dave Tang, strategic marketing manager at Quantum. "There's no odometer to help the user really un-

New Tips on Buying Used PCs

Not every returned PC gets disassembled for its parts. Many direct manufacturers and retailers resell these PCs at a discount. If you're willing to shop around, you may be able to get a refurbished computer for up to $500 off the price of a new model. But are the savings really worth it?

Unadvertised Specials

Nearly every direct-sales PC manufacturer sells refurbished computers that have been returned by customers (usually within the 30-day money-back guarantee period), cleaned up, and retested. These units are rarely advertised, though, and they aren't sold by the main telephone sales staff. Instead, they're typically shipped off to factory stores, which often cater to local customers.

But in many cases, out-of-state buyers can take advantage of the bargains, too. Compaq, Micron, and Gateway will ship refurbished PCs anywhere in the United States. Dell, on the other hand, doesn't take phone orders for refurbished PCs, so sales are limited to their local outlet store customers.

As you might expect, the selection varies considerably, as do prices. One week last February, for example, Gateway was offering a 133-MHz Pentium, complete with a 4X CD-ROM drive, 17-inch monitor, 1.6GB hard drive, 16MB of RAM, sound card, speakers, 28.8-kbps modem, Windows 95, and Microsoft Office 95, for $2744 plus sales tax and shipping—only $150 less than its comparable new unit. At the same time, Micron offered a comparably equipped unit for $2450—roughly $500 less than its new model.

If you shop around, you may be able to get a refurbished computer for up to $500 off the price of a new model.

While refurbished PCs typically come with the same warranty offered on new units, you'll probably lose out on some of the extras. Gateway trims the 30-day money-back guarantee to just 5 days from the time you receive your refurbished PC, and Micron doesn't offer any money-back guarantee—although the salesperson we talked to indicated that the company will replace damaged units. It also leaves out its on-site service.

Retail stores like Circuit City and CompUSA also sell "open box specials," PCs either returned by customers or used on the sales floor as demo units.

A couple words of caution: Check the contents to see if all the components are included. It's not uncommon for returned PCs to be missing a mouse, documentation, or even the hard drive. Some stores sell these systems "as is," and the contents are typically noted on the box.

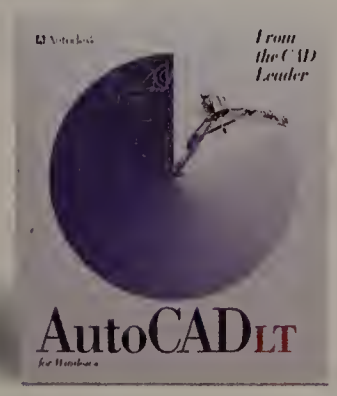
The majority of these units come with a 30-day money-back guarantee and the full manufacturer's warranty, but you'll want to verify this before you take the computer home with you.

You should also ask whether the PC was used as a demo unit or returned. Though you're taking a calculated risk buying any used product, the risk is higher on a demo model than on one that's been returned by a customer. "Demo systems take quite a beating by customers," confided one store manager. "There's no way of telling what effect all that abuse will have on the long-term reliability of the PC."

The success of AutoCAD has inspired dozens of cheap imitations.

Unlike those "bargain" packages, AutoCAD® LT Release 2 is based on AutoCAD, the world standard, so it gives you features the others can't. In fact, its features and their ease of use have made AutoCAD LT the best selling 2D CAD package in the world. And now with Release 2, AutoCAD LT is even easier to use and learn, with tool-tips and on-line help at every level. If you're new to CAD from pencil-based drafting, *Orientation* can guide you step by step through the transition. To get you started quickly, AutoCAD LT automates the drawing setup process, defining drawing space and title blocks in one easy step. For occasional help with specific tasks, cue cards give you the on-screen answers you need without interrupting your work. And here's something else the others can't match. AutoCAD LT Release 2 reads and writes data just like AutoCAD software, so your work will be compatible with over a million AutoCAD users world-wide. Add to this free 90-day product support and available pre-drawn symbols packages for architectural, mechanical and electrical applications and you can see why you should beware of cheap imitations. So visit your local retailer or authorized AutoCAD dealer today to buy your copy of AutoCAD LT. Or for a free demo disk, call 1-800-228-3601* and ask for Demopak A216

And one inexpensive one.



Only $495

Autodesk

*Outside the U.S. and Canada fax 1-415-507-6142. All prices are suggested retail price. ©1996 Autodesk, Inc. Autodesk, the Autodesk logo, and AutoCAD are registered trademarks of Autodesk Inc. Windows is a trademark of Microsoft Corporation Company. Product names other than Autodesk and Autodesk products are intended to be fictitious. Any resemblance to actual company or product name is accidental.

12.1" DISPLAY, 1024 x 768 RESOLUTION

Watch brilliant colors spring to life on a display so large, it rivals desktop monitors. 1024 x 768 resolution provides the sharpest images ever found in a portable and 64% more workspace than 800 x 600 resolution.

NEW TECHNOLOGY

ZOOMED VIDEO

Toshiba's innovative Zoomed Video (ZV) architecture drives portable multimedia into an amazing new dimension. Simply insert an industry standard ZV PC Card and the task of transferring video data is automatically offloaded from the system bus. This means you get advanced multimedia capabilities such as video conferencing, on-screen television and support of current MPEG1 and future MPEG2 video playback.

NEW TECHNOLOGY

CARDBUS

Tecra's two PC Card slots support 16-bit PC Cards and are ZV card and CardBus ready.

TECRA™

720CDT
- 1024 x 768 resolution

710CDT
- 800 x 600 resolution

BOTH MODELS
- 12.1" dia. color active matrix display
- 133MHz Intel Pentium® Processor (2.9v) with 256KB of level 2 cache
- 16MB of high speed EDO memory (expandable to 144MB)
- Removable 1.2 billion byte (=1.13GB) HDD
- PCI system-bus architecture
- HiQVideo™ multimedia PCI graphics controller with 64-bit BitBLT graphics acceleration, interpolation and scaling
- Modular 6X CD-ROM drive
- Lithium Ion battery
- 16-bit Sound Blaster™ Pro compatible audio system
- Integrated 28.8Kbps data/fax modem with telephony capabilities
- Supports two Type II or one Type III 16-bit PC Card(s); ZV card and 32-bit CardBus ready
- Infrared data port (IrDA-compliant)
- Optional Desk Station™ V Plus docking station
- Optional NoteDock™ II Enhanced Port Replicator
- Pre-installed software: Windows® 95 or MS-DOS® with Windows® for Workgroups, Indeo™ video, and Synchro™ Multimedia Connect™
- 3-year limited warranty
- Toll-free technical support – 7 days a week, 24 hours a day

Designed for Microsoft® Windows®95

intel inside pentium™ PROCESSOR

©1996 Toshiba America Information Systems, Inc. All specifications and availability are subject to change. All products indicated by trademark symbols are trademarked and/or registered by their respective companies. Intel Inside and Pentium Processor Logos are trademarks of Intel Corporation. Intel ProShare software courtesy of Intel Corporation.

133MHz IN FULL MOTION.

NEW TECHNOLOGY

FULL-MOTION VIDEO

The new HiQVideo™ PCI graphics controller with 64-bit BitBLT turns multimedia fantasy into fact. With hardware zoom and YUV to RGB conversion, you can have full-screen, full-motion video with an amazing depth of color and high-quality resolution.

NEW TECHNOLOGY

133MHz PENTIUM® TECHNOLOGY

Tecra combines the fastest notebook processor available today with a 256KB level 2 cache and EDO memory expandable to 144MB. The PCI architecture offers blazing video and data throughput while Tecra's 2.9v CPU delivers premium perfomance without compromising battery life.

INTEGRATED COMMUNICATIONS

Join a conference call from your notebook. Switch to answering machine mode while you prepare a fax. A built-in 28.8Kbps data/fax modem, full-duplex speakerphone and RJ-11 phone jack put a world of advanced communication features at your fingertips.

NEW TECHNOLOGY

DESK STATION V PLUS

Unlock all the expansion possibilities you need with two PCI/ISA expansion slots, an additional dedicated PCI slot and two Type III PC Card slots (32-bit CardBus ready). Desk Station™ V Plus also features Windows® 95 hot-docking capabilities and a SelectBay for the ultimate in convenience and flexibility.

NEW TECHNOLOGY

6X CD-ROM

Get 50% more speed than a 4X CD-ROM when accessing video, sound and data on CD. Or, using Toshiba's SelectBay™, interchange the modular CD-ROM drive with the floppy disk drive in seconds.

THE NEW TECRA™. THE NEWEST TECHNOLOGY. Tecra combines the brand new 133MHz mobile Pentium® processor with screaming-fast PCI architecture and Zoomed Video technology that brings unprecedented video and graphics performance into the portable realm. And with memory expandable to 144MB, you can have more than you've ever experienced in a notebook computer. Add to that a giant 12.1" display and a 1.2 billion byte hard drive and you've got a system that will put you in full motion instantly. For more information visit the Toshiba website at http://www.toshiba.com, or for a dealer near you, call 1-800-457-7777.

In Touch with Tomorrow

TOSHIBA

The World's Best Selling Portable Computers.

Circle 228 on reader service card

derstand how much life the product has gone through," says Tang. He adds that, in addition to whatever damage a drive might incur at the hands of a consumer, there's a potential for incorrect handling when the drive is removed from a used unit and then reinstalled in a new computer.

And while PC companies can perform tests to verify that the drive is functioning properly when it's installed, "latent damage from mishandling or other abuse may not show up in testing but can result in reduced life expectancy of the drive," Tang cautions.

The Facts We Don't Have

Martin Reynolds, an analyst with Dataquest in San Jose, California, who has worked with many PC companies, is also worried about used components having been exposed to electrostatic discharge when a previous consumer opened up the computer case to check a loose cable or secure the motherboard, for example. "Components that are handled in an uncontrolled environment can be subject to electrostatic discharge," says Reynolds. "It's not a big blue spark that leaps from your finger to the memory chips, so you wouldn't even know anything happened. But even a few hundred volts can break down the circuitry." The component may continue to work and pass a manufacturer's inspections, but six months to a year later it could fail.

Besides technical concerns, the reuse of components in computers marked as "new" raises serious questions about truth in advertising. Many people—inside and outside the industry—emphasize that consumers have a right to know what they're buying. That's what is driving the multistate investigation into the practices of PC companies.

"States are acting pursuant to consumer protection statutes," says Todd Stone, assistant attorney general for Florida, which is heading up the investigation. When asked about the arguments raised by many PC companies that recycling doesn't matter since the components are as good as new, Stone responded: "If this issue were not important, we wouldn't have as many states as we do involved in this investigation." Adds Dataquest's Miller, "Even if it doesn't affect the failure rate of a product, it affects the customer's perception of a company."

A review of warranties from major PC companies indicates that some inform consumers that a computer may include used parts, but many companies don't mention this possibility. Packard Bell only began including information about the practice when it was required to do so as part of the settlement of the class action suits last August.

Coston, the lead attorney in Compaq's lawsuit with Packard Bell, argues that presale notification is important so that consumers can make a purchase decision based partially on which PCs include reused parts and which don't. Although at press time neither the FTC nor the states' attorneys general have noted what actions they'll take, Coston expects that all firms will be required to disclose prior to a sale whether their PCs include reused components.

Coston makes an analogy to the car business. "When you go to buy a car, you have a choice: one with 10 miles, one that has 500, and one that has 10,000. That's information you can assess and put your own price tag on," says Coston. He believes the same type of information should be available to PC buyers. "Consumers need to be able to differentiate between totally new, almost new, and used," he says.

Others in the computer industry agree, although not everyone thinks that it should be the role of state or federal agencies to set those guidelines.

Dataquest's Reynolds believes PC companies should include a tamper-proof sticker on the back of every PC indicating whether a manufacturer reused components. Such notification would serve two purposes, he believes: It would educate consumers about a PC manufacturer's practices, and it would help curb the problem of some stores repackaging returns and then selling them as new to another customer. "A store may reseal the box so things don't fall out, but if there's a factory seal on the computer, the store wouldn't attempt to recover the seal. That would be fraud," says Reynolds.

Let Us Hear From You

What do you think? Tell *PC World* your opinion on used parts in new PCs by filling out the short electronic questionnaire on PC World Online (http://www.pcworld.com /usedparts. html). We will report your response in an upcoming issue.

Do Consumers Really Care?

Among the hundreds of documents filed by Packard Bell and Compaq in their lawsuit are two consumer studies. The one commissioned by Compaq came to the conclusion that the use of refurbished components in new PCs has a significant impact on a consumer's purchase decision. The second, fielded by Packard Bell, showed that consumers want and expect to be able to return PCs for any reason. Recycling components, the company argues, is a necessary byproduct of these return policies.

It's a dilemma for the industry—but one that should be resolved by providing consumers with more information, not less. For some, prior notification is probably enough, provided they can find out which components are reused and how they are tested to ensure reliability. But others will be unwilling to buy a "new" computer if it includes even one part from a previously returned PC. The key is simply having the information to decide for yourself.

Roberta Furger is senior writer at PC World. *Aoife McEvoy is an assistant editor and Gabrielle Mitchell a senior associate editor at* PC World.

Tomorrow's Technology Today!

THE MICRON

Unleashing up to 166MHz of Pentium® processor power, the Micron Millennia surpasses established benchmarks to create a whole new level of unbridled computing performance. Continuing to triumphantly sweep the PC industry's most coveted awards, the Micron Millennia line was recently recognized with *PC Magazine*'s "Best Products Of 1995" award.

January 9, 1996
MILLENNIA

The Millennia series, legendary for blistering speed and outstanding value, will handle the most challenging applications—right now! So if your style is to work hard and fast, the Micron Millennia is designed just for you.

MILLENNIA P150

- Intel 150MHz Pentium processor
- 256K pipelined burst cache, flash BIOS
- 8X EIDE CD-ROM drive, 3.5" floppy drive
- 16-bit stereo sound & speakers
- PCI 64-bit, 3D video, MPEG, 2MB EDO
- *Tool-free* mini-tower or desktop
- Microsoft® Mouse, 104-key keyboard
- Microsoft Windows® 95 CD & MS Plus! CD
- 5-year/3-year Micron Power℠ warranty*

A • 8MB EDO RAM • 1.0GB EIDE hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
• Microsoft Works 95 CD
$1,999 Business lease $68/month

B • 16MB EDO RAM • 1.6GB EIDE hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
• Microsoft Office Pro 95 & Bookshelf 95 CDs
$2,399 Business lease $82/month

C • 32MB EDO RAM • 2.1GB EIDE hard drive
• 17" Micron 17FGx, .26dp (15.8" display)
• Microsoft Office Pro 95 & Bookshelf 95 CDs
$3,199 Business lease $109/month

- With 166MHz Pentium processor.....add $100
- With 133MHz Pentium processor.....subtract $100

MILLENNIA PLUS P166

- Intel 166MHz Pentium processor
- 256K pipelined burst cache, flash BIOS
- PCI 32-bit Ultra SCSI Fast-20 controller
- 8X SCSI-2 CD-ROM drive, 3.5" floppy drive
- 16-bit stereo sound & speakers
- PCI 64-bit, 3D video, MPEG, 2MB EDO
- *Tool-free* mini-tower or desktop
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows 95 CD & MS Plus! CD
- Microsoft Office Pro 95 & Bookshelf 95 CDs
- 5-year/3-year Micron Power warranty*

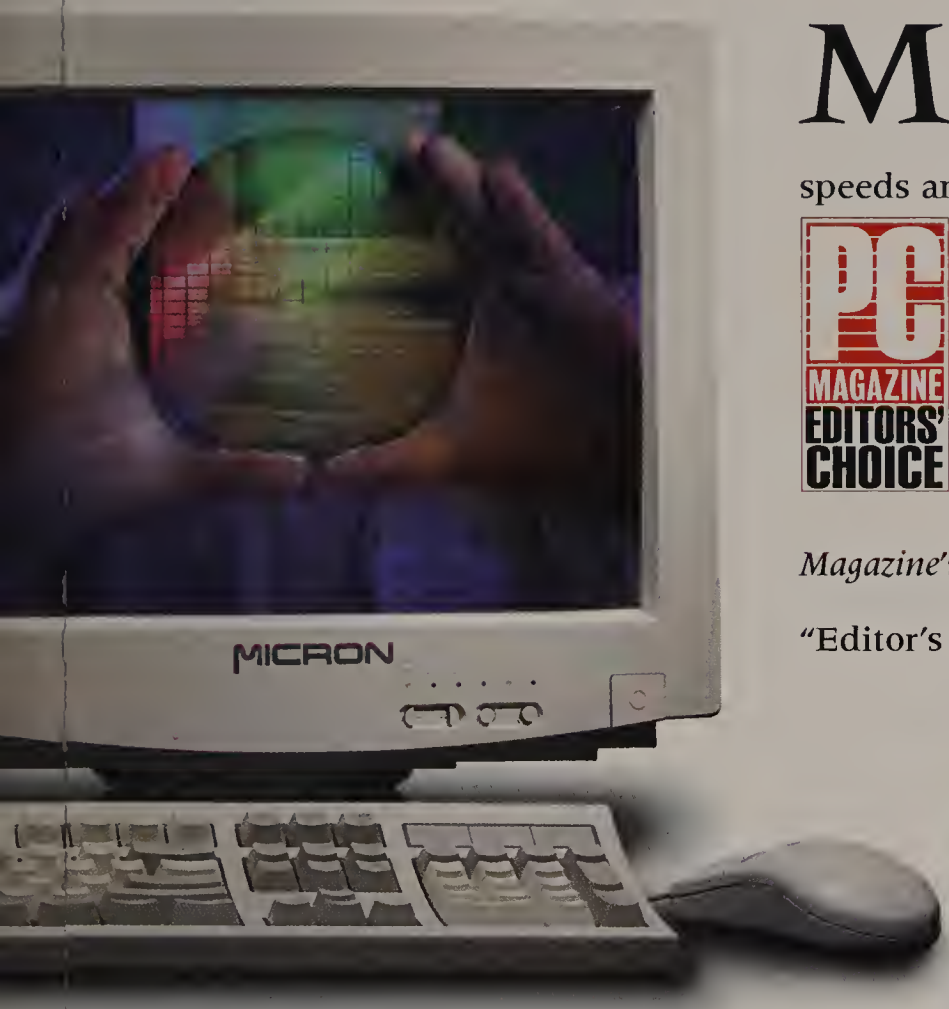
A • 16MB EDO RAM • 1.0GB Fast SCSI-2 hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
$2,799 Business lease $95/month

B • 32MB EDO RAM • 2.0GB Fast SCSI-2 hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
$3,599 Business lease $122/month

C • 64MB EDO RAM • 4.0GB Fast SCSI-2 hard drive
• 17" Micron 17FGx, .26dp (15.8" display)
$4,999 Business lease $170/month

- With 150MHz Pentium processor.....subtract $100

MILLENNIA



Micron computers are winning critical acclaim for their exceptional quality, record-breaking speeds and dependable performance. Recognized regularly for technical excellence and for outstanding customer service and technical support, Micron computers have been chosen for *PC Magazine*'s "Best Products of 1995" and "Editor's Choice" five times, *PC World*'s "Best Buy" over 50 times, *PC Computing*'s 1995 MVP award and *Computer Shopper*'s "Best Buy of 1995." Micron received the highest scores in *PC Magazine*'s "1995 Service and Reliability" survey in the four categories of "Customer Satisfaction with Reliability," "Repair Experience," "Technical Support" and "Future Likelihood of Buying Again."

PC MAGAZINE EDITORS' CHOICE

EXPERTS' Windows SOURCES PICK

PC WORLD BEST BUY

HIGHLY '95 C CADalyst RECOMMENDED

SERVICE & RELIABILITY PC MAGAZINE READERS' CHOICE

PC MAGAZINE EDITORS' CHOICE

May 30, 1995
MILLENNIA P120

"The Millennia is nothing short of the best all-around PC available on the market today."

—*PC Magazine*, April 25, 1995

MVP 1995 WINNER PC Computing

December 1995
MILLENNIA P133

" . . . we tested the latest PCs until they begged for mercy and found a no-compromise choice: Micron's Millennia P133."

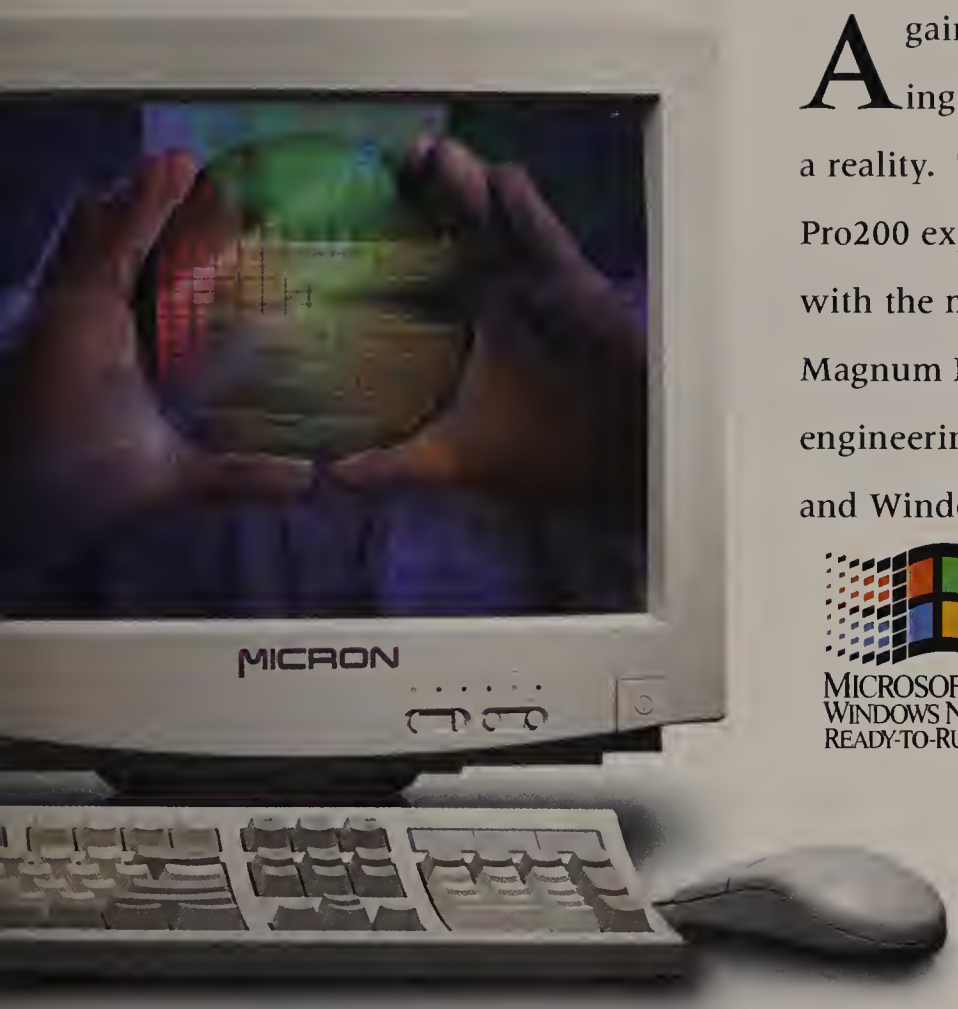
—*PC Computing*, December 1995

800-233-5671

http://www.mei.micron.com

MICRON ELECTRONICS, INC.

PRO MAGNUM



Again, Micron leads the industry by making affordable workstation performance a reality. The new Micron Magnum Plus Pro200 expands the limits of a workstation with the most advanced components available. The Magnum Plus Pro200 system combines superior Micron engineering with Intel's advanced Pentium® Pro processor and Windows® NT for the fastest, most reliable system on the market today. The Micron Magnum Plus Pro200—just what you'd expect from Micron Electronics, the technology leader.

intel inside PENTIUM PRO PROCESSOR

MICROSOFT WINDOWS NT READY-TO-RUN

MAGNUM PRO150

- Intel 150MHz Pentium Pro processor
- 256K internal cache, flash BIOS
- 8X EIDE CD-ROM drive, 3.5" floppy drive
- 16-bit stereo sound & speakers
- PCI 64-bit video, MPEG, 2MB EDO
- *Tool-free* mini-tower or desktop
- Microsoft® Mouse, 104-key keyboard
- Microsoft Windows NT Workstation 3.51 CD
- Microsoft Office Pro 95 & Bookshelf 95 CDs
- 5-year/3-year Micron Power℠ warranty*

A • 16MB RAM • 1.0GB EIDE hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
$2,999 Business lease $102/month

B • 32MB RAM • 1.6GB EIDE hard drive
• 17" Micron 17FGx, .26dp (15.8" display)
$3,799 Business lease $129/month

MAGNUM PLUS PRO200

- Intel 200MHz Pentium Pro processor
- 256K internal cache, flash BIOS
- PCI 32-bit Ultra SCSI Fast-20 controller
- 8X SCSI-2 CD-ROM drive, 3.5" floppy drive
- 16-bit stereo sound & speakers
- PCI 64-bit video, MPEG, 2MB EDO
- *Tool-free* mini-tower or desktop
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows NT Workstation 3.51 CD
- Microsoft Office Pro 95 & Bookshelf 95 CDs
- 5-year/3-year Micron Power warranty*

A • 32MB RAM • 2GB Fast SCSI-2 hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
$4,399 Business lease $150/month

B • 64MB RAM • 4GB Fast SCSI-2 hard drive
• 17" Micron 17FGx, .26dp (15.8" display)
$5,799 Business lease $182/month

C • 128MB RAM • 9GB Fast SCSI-2 hard drive
• 21" Micron 21FGx, .26dp (20.0" display)
$9,499 Business lease $298/month

*MICRON POWER℠ WARRANTY & SUPPORT

- 5-year limited warranty on microprocessor and main memory • 3-year limited parts-only system warranty
- 1-year optional on-site service agreement • 30 days of free Micron-supplied software support
- 30-day money-back policy • 24-hour technical support

All sales are subject to Micron's standard limited warranties and terms and conditions of sale. Copies of the limited warranties may be obtained by calling Micron.

800-233-5671

http://www.mei.micron.com

MICRON ELECTRONICS, INC.

AWARD-WINNING SYSTEMS

SERVERS

POWERSERVER SMP P133

- Intel 133MHz Pentium® processor
- Dual Pentium SMP ZIF sockets
- 512K write-back cache, flash BIOS
- Slots: 5 EISA, 2 PCI, 1 EISA/PCI
- PCI 32-bit Ultra SCSI Fast-20 controller
- 8X SCSI-2 CD-ROM drive, 3.5" floppy drive
- PCI 64-bit video, MPEG, 2MB EDO
- Full-size tower with 10 drive bays
- Microsoft® Mouse, 104-key keyboard
- Microsoft Windows® 95 CD & MS Plus! CD
- 5-year/3-year Micron Power℠ warranty*

A • 16MB RAM • 1GB SCSI-2 hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
$2,899 Business lease $99/month

B • 32MB RAM • 2GB SCSI-2 hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
$3,699 Business lease $126/month

- With second 133MHz Pentium processor....add $399
- With Windows NT Workstation 3.51 CD.....add $99

POWERSERVER SMP P266

- Dual 133MHz Pentium processors
- 512K write-back cache, flash BIOS
- Slots: 5 EISA, 2 PCI, 1 EISA/PCI
- PCI 32-bit Ultra SCSI Fast-20 controller
- 8X SCSI-2 CD-ROM drive, 3.5" floppy drive
- PCI 64-bit video, MPEG, 2MB EDO
- Full-size tower with 10 drive bays
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows NT Workstation 3.51 CD
- 5-year/3-year Micron Power℠ warranty*

A • 32MB RAM • 2GB SCSI-2 hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
$3,999 Business lease $136/month

B • 64MB RAM • 4GB SCSI-2 hard drive
• 17" Micron 17FGx, .26dp (15.8" display)
$5,399 Business lease $170/month

POWERSERVER SMP P133

Exceptional speed, performance and reliability are just a few of the reasons Micron is a technology leader in PC design. From the award-winning PowerStation to the PowerServer SMP P266, Micron offers a complete range of dependable products to suit every need. When you're considering your next PC purchase, consider a Micron PC.

POWERSTATION P100

- Intel 100MHz Pentium processor
- 8X EIDE CD-ROM drive, 3.5" floppy drive
- 16-bit stereo sound & speakers
- PCI 64-bit video, MPEG, 2MB EDO
- *Tool-free* mini-tower or desktop
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows 95 CD & MS Plus! CD
- 5-year/3-year Micron Power warranty*

A • 8MB EDO RAM • 1.0GB EIDE hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
• Microsoft Works 95 CD
$1,699 Business lease $58/month

B • 16MB EDO RAM • 1.6GB EIDE hard drive
• 15" Micron 15FGx, .28dp (13.7" display)
• Microsoft Office Pro 95 & Bookshelf 95 CDs
$2,099 Business lease $71/month

POWERSTATION LX P100

- Intel 100MHz Pentium processor
- 8MB EDO RAM • 1.0GB EIDE hard drive
- 3.5" floppy drive, flash BIOS
- PCI 64-bit graphics accelerator (1MB)
- 15" Micron 15FGx, .28dp (13.7" display)
- *Tool-free* mini-tower or desktop
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows 95 & MS Plus!
- Microsoft Works 95
- 5-year/3-year Micron Power warranty*

$1,499 Business lease $51/month

MICRON HOME MPC

Reinvent the meaning of work and play. The Micron Home MPC presents a spectacular multimedia experience complete in a single package. The only limit is your imagination.

HOME MPC P100

- Intel 100MHz Pentium® processor
- 256K pipelined burst cache, flash BIOS
- 8MB EDO RAM • 1.0GB EIDE hard drive
- 8X EIDE CD-ROM drive, 3.5" floppy drive
- 16-bit stereo sound & speakers
- 28.8 fax/modem, speakerphone, voice mail
- Microsoft Phone telephony software
- Internet ready
  - Internet in a Box from CompuServe®/Spry
  - Internet Explorer
- Prodigy®, America Online® & CompuServe trial memberships
- PCI 64-bit, 3D video, MPEG, 2MB EDO
- 15" Micron 15FGx, .28dp (13.7" display)
- *Tool-free* mini-tower or desktop
- Microsoft® Mouse, 104-key keyboard
- Microsoft Windows® 95 CD & MS Plus! CD
- Microsoft Home Pak includes: Works 4.0 for Windows 95; Publisher Deluxe for Windows 95; Encarta® 96; Encarta 96 World Atlas; Music Central™ 96; Wine Guide; Arcade 1.0; Scenes–Sports Extremes Collection; Cinemania® 96; Julia Child Home Cooking; Best of Windows Entertainment Pack; Money 4.0 for Windows 95; CD Sampler (includes Fury³ game demo)
- 5-year/3-year Micron Power℠ warranty*

$1,999

- With 133MHz Pentium processor.....add $100

HOME MPC P150

- Intel 150MHz Pentium processor
- 256K pipelined burst cache, flash BIOS
- 16MB EDO RAM • 1.6GB EIDE hard drive
- 8X EIDE CD-ROM drive, 3.5" floppy drive
- 16-bit Wavetable 3D stereo sound
- Advent AV270 2x25 watt stereo speakers
- 28.8 fax/modem, speakerphone, voice mail
- Microsoft Phone telephony software
- Internet ready
  - Internet in a Box from CompuServe/Spry
  - Internet Explorer
- Prodigy, America Online & CompuServe trial memberships
- PCI 64-bit, 3D video, MPEG, 2MB EDO
- 17" Micron 17FGx, .26dp (15.8" display)
- *Tool-free* mini-tower or desktop
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows 95 CD & MS Plus! CD
- Microsoft Office 95 & Bookshelf 95 CDs
- Microsoft Home Pak includes: Works 4.0 for Windows 95; Publisher Deluxe for Windows 95; Encarta 96; Encarta 96 World Atlas; Music Central 96; Wine Guide; Arcade 1.0; Scenes–Sports Extremes Collection; Cinemania 96; Julia Child Home Cooking; Best of Windows Entertainment Pack; Money 4.0 for Windows 95; CD Sampler (includes Fury³ game demo)
- 5-year/3-year Micron Power warranty*

$2,999

- With 166MHz Pentium processor.....add $100

Microsoft Home software is the most spectacular collection of educational and entertainment software assembled in a single package. There's something everyone in the family will love from the fabulous new Encarta 96 World Atlas, exclusive with a Micron Home MPC, to the assortment of exciting games in Best of Windows Entertainment Pack.

*MICRON POWER℠ WARRANTY & SUPPORT

- 5-year limited warranty on microprocessor and main memory
- 3-year limited parts-only system warranty
- 1-year optional on-site service agreement
- 30 days of free Micron-supplied software support
- 30-day money-back policy
- 24-hour technical support

All sales are subject to Micron's standard limited warranties and terms and conditions of sale. Copies of the limited warranties may be obtained by calling Micron.

International Sales 208-893-8970 • International Fax 208-893-8993 • Tollfree from Canada 800-708-1758

Tollfree from Puerto Rico 800-708-1756 • Tollfree from Mexico 95-800-708-1755

• 900 E. Karcher Road, Nampa, ID 83687
• Mon-Fri 6am-10pm Sat 7am-5pm (MT)
• International Sales Hours: Mon-Fri 6am-7pm (MT)
• 208-893-3434 • Fax 208-893-3424
• Purchase Order Fax 208-893-8992
• Technical Support Available 24 Hours A Day–7 Days A Week
• Technical Support E-mail: techsupport.meic@micron.com

800-233-5671

http://www.mei.micron.com

MICRON
ELECTRONICS, INC.

©1996 Micron Electronics, Inc. All rights reserved. All prices and specifications subject to change without notice. Micron Electronics, Inc. is not responsible for omissions and/or errors in typography or photography. Intel, Intel Inside and Pentium are registered trademarks of the Intel Corporation. Microsoft is a registered trademark and Windows, Windows NT and the Windows logos are trademarks of Microsoft Corporation. Micron Power is a service mark of Micron Electronics, Inc. All other company trademarks are trade names of each respective company. Prices do not include shipping and handling. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All returns require RMA numbers and must be shipped in the original condition prepaid and insured. Lease prices based on 36-month lease.

FAM- PCWD-9606

YOU WANT MORE?

Custom configure your new Micron system with our most popular accessories.

MULTIMEDIA OPTIONS

- Creative Labs SoundBlaster™ 32 Wavetable sound card.....$59*
- Creative Labs SoundBlaster 32 Wavetable sound card w/2MB RAM....$149*
- Advent AV270 Powered Partners stereo speakers.....$99
- Advent AV370 Powered Partners stereo speakers w/subwoofer.....$199
- Microsoft® SideWinder Pro 3D joystick.....$59

MICROSOFT® HOME PAK

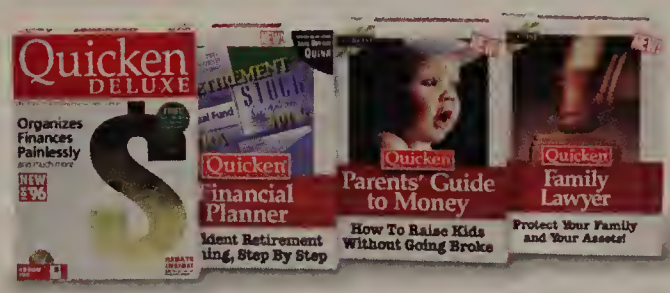
- Microsoft Home Pak, including: Works 4.0 for Windows 95; Publisher Deluxe for Windows 95; Encarta® 96; Encarta 96 World Atlas; Music Central™ 96; Wine Guide; Arcade 1.0; Scenes–Sports Extremes Collection; Cinemania® 96; Julia Child Home Cooking; Best of Windows Entertainment Pack; Money 4.0 for Windows 95; CD Sampler (including Fury³ game demo)

STORAGE/MEDIA OPTIONS

- Plextor EightPlex 8X 1.2MB/s SCSI internal CD-ROM drive.....$200**
  (upgrade from systems with standard 8X EIDE CD-ROM drive)
- Iomega SCSI Jaz drive with 1.0GB removable cartridge.....$399**
- Iomega Zip IDE drive with 100MB removable cartridge.....$99
- Iomega Ditto 800 (400/800MB) Travan Tape back up w/tape.....$149
- Iomega Ditto 3200 (1.6/3.2GB) Travan Tape back up w/tape.....$299
- Conner 4/8GB DDS-2 DAT SCSI Tape back up w/tape.....$999**

QUICKEN® FINANCIAL PAK

- Quicken Financial Pak, including: Quicken Deluxe 5.0; Quicken Financial Planner™; Quicken Parent's Guide to Money™; Quicken Family Lawyer™.....$69



COMMUNICATION OPTIONS

- 28.8bd V.34 internal data/fax modem.....$139***
- 28.8bd V.34 internal Telephony data/fax modem w/full duplex speakerphone and voice mail.....$159†

OTHER OPTIONS

- APC Per7T surge suppressor.....$39
- APC Pro7T surge suppressor.....$69
- Microsoft Natural Keyboard.....$49

Microsoft
WHERE DO YOU WANT TO GO TODAY?™

NETWORKING OPTIONS

- NE2000 Compatible Ethernet ISA NIC (BNC & RJ-45).....$49
- 3COM 3C509 Ethernet ISA NIC (BNC, AUI & RJ-45).....$99
- 3COM 3C595 Fast Etherlink PCI 10/100 NIC (RJ-45 only).....$159
- SMC ISA TokenCard network card.....$199

DISPLAY/VIDEO OPTIONS

- 17" Hitachi SuperScan 1711 (15.9" display) .26dp color monitor.....$100††
- 21" Hitachi SuperScan 2111 (20" display) .26dp color monitor.....$1000††
- Diamond Stealth64 video card w/2MB VRAM.....$150†††
- Diamond Stealth64 video card w/4MB VRAM.....$300†††
- #9 Imagine 128 video card w/4MB VRAM.....$500†††
- #9 Imagine 128 video card w/8MB VRAM.....$750†††

* Upgrade from systems with standard SoundBlaster™ 16 sound card
** Requires SCSI Host Adapter
*** V.34 modem includes trial memberships to CompuServe®, Prodigy® and America Online®
† Requires sound card
†† Upgrade from systems with standard Micron 17" 17FGx color monitor
††† Upgrade from systems with standard 64-bit 2MB video card

800-223-6571

http://www.mei.micron.com

MICRON ELECTRONICS, INC.

900 E. Karcher Road, Nampa, ID 83687
Mon-Fri 6am-10pm Sat 7am-5pm (MT)
International Sales Hours: Mon-Fri 6am-7pm (MT)
208-893-3434 • Fax 208-893-3424
Purchase Order Fax 208-893-8992
Technical Support Available 24 Hours A Day–7 Days A Week
Technical Support E-mail: techsupport.meic@micron.com

Circle 149 on reader service card

PENTIUM® PRO TECHNOLOGY

STARTING AT

$2195

FASTER than a bolt of lightning, more powerful than a burst of thunder, ALR's EVOLUTION 6 series is taking the business world by storm. Featuring the power of Pentium® Pro technology with speeds of up to 200-MHz, these two new systems are going to improve the forecast for your business. Looking for the ultimate in Pentium Pro technology? The **ALR EVOLUTION DUAL6** is one of the industry's first PCs to offer an immediate upgrade path to dual Pentium Pro technology. In other words, you can get the power of a high-performance RISC-based workstation for thousands of dollars less. Its the power you need to take advantage of 32-bit operating systems such as Windows® NT, SCO® UNIX, and Novell® NetWare™ SMP. With room for up to 512-MB of RAM and over 16-GB of storage, the EVOLUTION DUAL6 has the performance and expandability you're looking for in a small business server. A suite of built-in Hardware Management Features prevents downtime by monitoring critical information such as CPU temperature, fan speed, and system voltage. Or just add a high performance PCI video card, and you've got the ultimate CAD, scientific or animation workstation.

ALR EVOLUTION DUAL6
150-or 200-MHz Pentium Pro Processor
Dual Pentium Pro Processor Ready
Mini Tower Model
16-MB ECC Memory
512-MB Max Memory
256-KB Integrated L2 Cache
PCI/ISA Bus Architecture
Six Total Storage Bays
Eight Total Expansion Slots
315 Watt Power Supply
5 Year/ 36 Month Warranty
First Year On-Site Service*

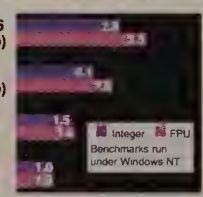
intel inside
PENTIUM® PRO PROCESSOR

ALR EVOLUTION 6
150-or 200-MHz Pentium Pro Process
Mini Tower Model
16-MB Memory
128-MB Max Memory
256-KB Integrated L2 Cache
PCI/ISA Bus Architecture
Six Total Storage Bays
Six Total Expansion Slots
200 Watt Power Supply
5 Year/ 36 Month Warranty
First Year On-Site Service*

Trying to fit Pentium Pro technology into a tight budget? Then check out the **ALR EVOLUTION 6**. This value-packed PC offers a 150-MHz Pentium Pro chip and 16-MB of RAM for as little as $2195 MSRP. Yet even at this low price, it takes full advantage of the Pentium Pro chip's most advanced features, including Dynamic Execution.

ALR EVOLUTION DUAL6

BYTEmark 32-bit CPU/FPU Benchmarks



Higher score is better.

5 YEAR 36 MONTH warranty

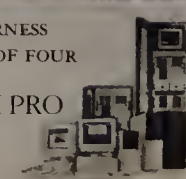
And no matter which system you choose, you'll receive the quality and reliability that you've come to expect from ALR's award-winning servers and workstations. Quality that's backed by ALR's 5 Year/36 Month Limited Warranty and industry leading service and support.

ALR EVOLUTION 6

To start *taking advantage of the electrifying performance of ALR's EVOLUTION 6 series, visit your local ALR reseller.* *Or call:* **1-800-444-4ALR** *(ref# 5306)*

ALR®
Advanced Logic Research, Inc.

FIRST TO HARNESS THE POWER OF FOUR 200-MHz PENTIUM PRO PROCESSORS



ALR is on the Internet - http://www.alr.com *& CompuServe* **- GO ALRINC.** Advanced Logic Research, Inc 9401 Jeronimo, Irvine, CA 92718 (714)581-6770 FAX (714) 581-9240. * Requires one time registration fee of $9.95. Prices, configurations and specifications subject to change without notice. Systems shown with optional equipment. Pricing based on U.S. dollars. ALR is a registered trademark of Advanced Logic Research, Inc. Pentium Pro logo and Intel Inside logos are trademarks of Intel Corporation. All other brand and product names are trademarks or registered trademarks of their respective owners. © 1996 by ALR

Circle 9 on reader service card

CommuniCase™

BETTER BY DESIGN

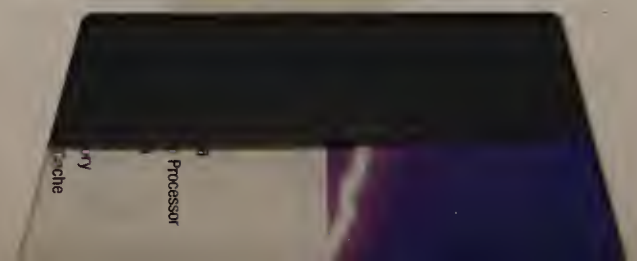
Design Number: 95C5858C

Date: 6/96

.0125BS

Patent rights reserved.
This design is the property of Smurfit Media Packaging

SMURFIT MEDIA PACKAGING



Fax to the Max

How to get the most fax for your money from any version of Windows.

Do you run Windows? Do you have a fax-modem? Congratulations—you have a built-in fax machine. You can send and receive faxes and even create fancy cover sheets, all without leaving your desk. The catch: Windows faxing is not exactly user-friendly. So read on for the fax facts, starting with Windows 95 and followed by some tips for getting Windows for Workgroups 3.11 fax-ready.

Windows 95 Fax Setup

The key to faxing from Windows 95 is Microsoft Exchange, a utility that lets you send and receive faxes as well as e-mail. Here's how to set it up. First, you need to confirm that the software is installed: Go to *Start•Settings•Control Panel•Add/Remove Programs•Windows Setup*. Look in the Components Window and make sure *Microsoft Exchange* and *Microsoft Fax* are checked. If you're not on a local area network or you don't connect to a remote e-mail server, and you know you won't be using Microsoft Mail with Exchange, you can save 600K or so in disk space by turning off MS Mail. Select (don't uncheck) *Microsoft Exchange*, click *Details*, uncheck *Microsoft Mail Services*, then click *OK*. Click *OK* on the next screen to enable Exchange.

"Set Up Windows 95's Fax Software" (next page) shows how to set up Exchange's fax service. When you're

BY SCOTT SPANBAUER

done, start Exchange by double-clicking the *Inbox* icon on the desktop, or choose *Start • Programs • Microsoft Exchange.*

Sending Faxes

You can create and send a fax from Exchange's Inbox (see "Create and Send a Fax"), or directly from the Windows 95 Start menu. Or you can right-click a document in Explorer or any folder window and choose *Send To • Fax Recipient.* However, you're most likely to print to the Microsoft Fax driver from your Windows application. To do this, select *File • Print* and choose *Microsoft Fax* from the *Name* drop-down list. If you use an Exchange-compatible program like Microsoft Office, you can simply choose *File • Send.*

TIP

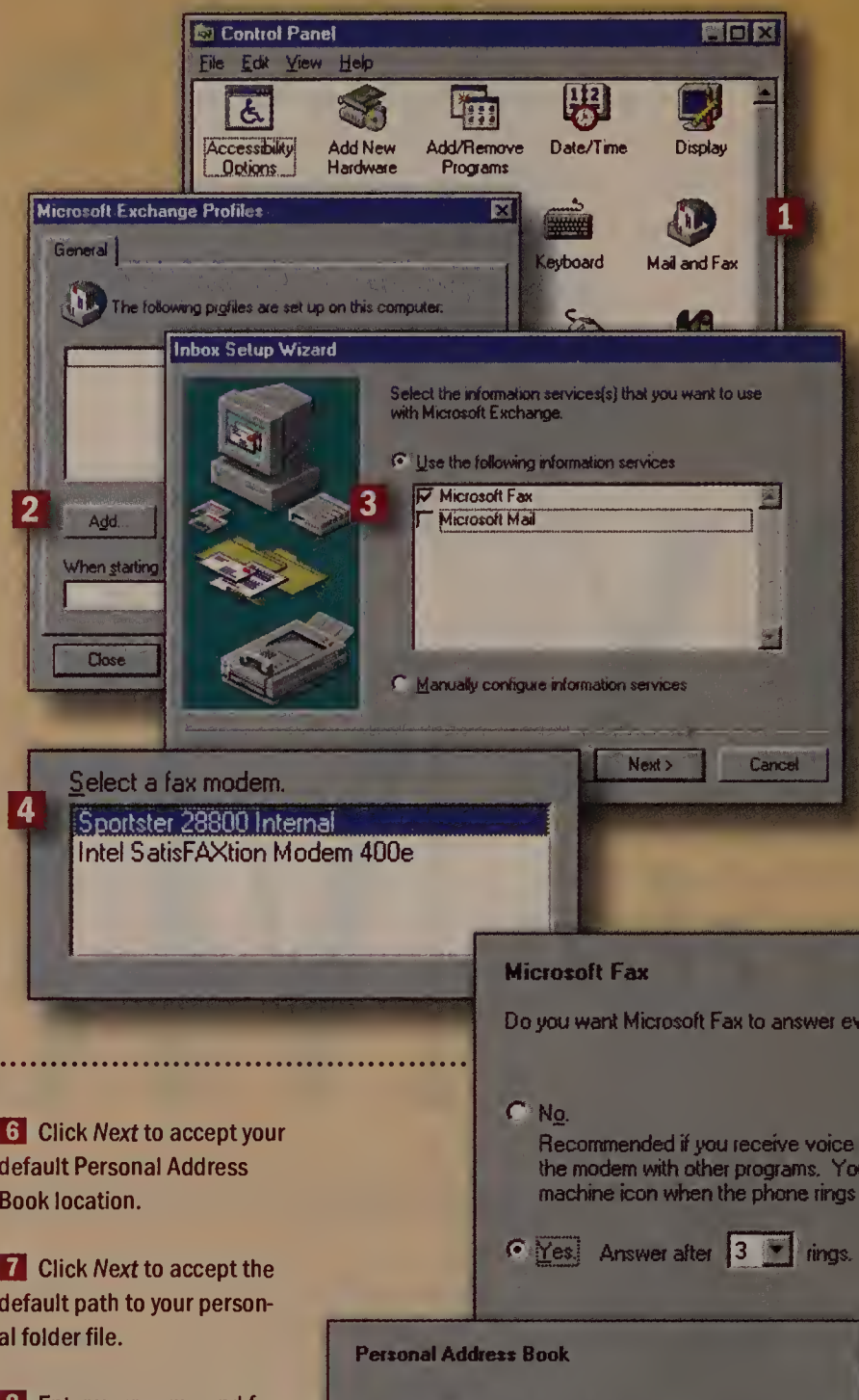
COVER PAGE DESIGN

Exchange comes with four predesigned cover pages, but it also has a pretty sophisticated utility for making your own. To launch the utility, choose *Start • Programs • Accessories • Fax • Cover Page Editor.* Use Exchange's data fields, which automatically add identifying information for both you and the recipient.

Planning and Previewing

By default, Exchange sends messages immediately. To send faxes when phone rates are lower, open Exchange and select *Tools • Microsoft Fax Tools • Options* (see "Schedule Your Faxes"). Select *Specific time*, and enter your preferred faxing time or choose *Discount rates*. Click *OK*, exit, and restart Exchange to enact the setting. To preview your fax, double-click its icon in Exchange's outbox. You can see a list of outgoing faxes by selecting *Tools • Microsoft Fax Tools • Show Outgoing Faxes.*

Set Up Windows 95's Fax Software



1 In the Control Panel, launch the Mail and Fax applets.

2 If you have services installed, use the Properties button to customize them. If you haven't done this already, click *Add.*

3 Select *Microsoft Fax* and, at the same time, any other e-mail services that you'd like to use, then click *Next.*

4 Select a modem, then click *Next.* If you don't select a modem, Windows will search for one automatically.

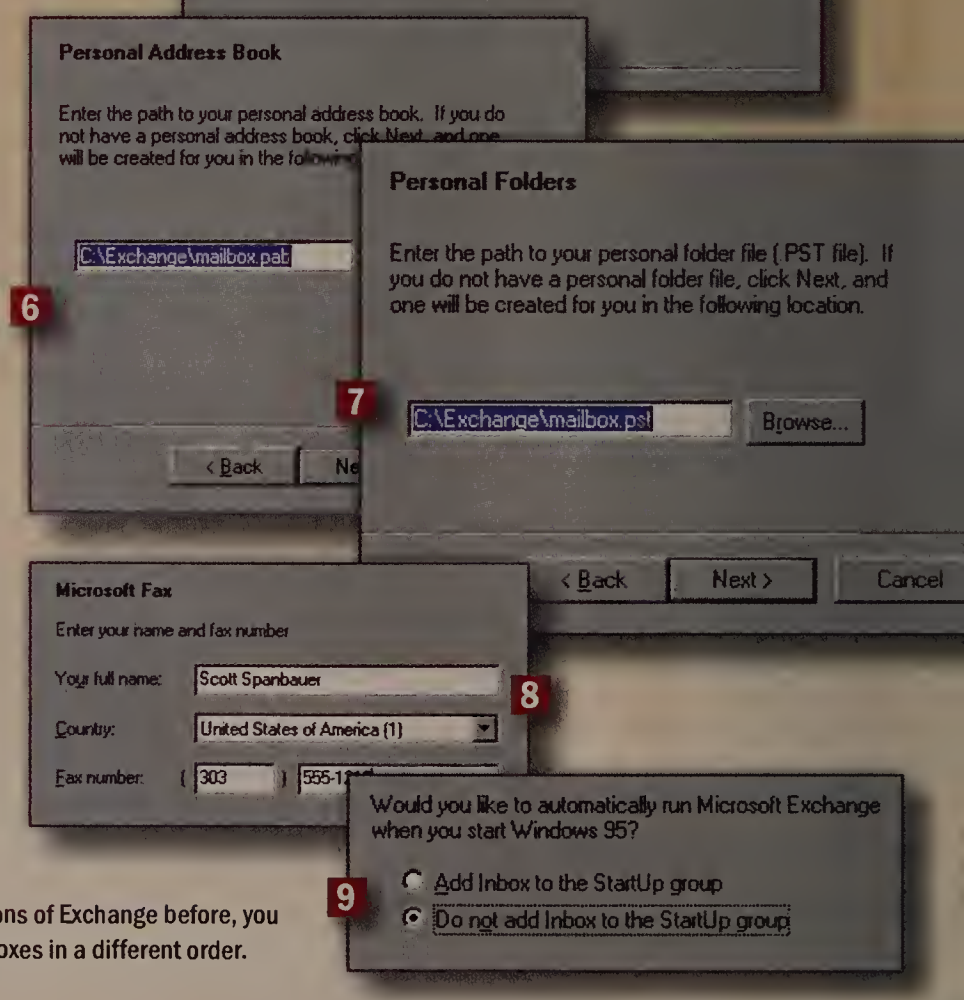
5 Choose a fax reception option; if you're not sure what to choose, select *No*, then click *Next.*

6 Click *Next* to accept your default Personal Address Book location.

7 Click *Next* to accept the default path to your personal folder file.

8 Enter your name and fax number and click *Next.* This information will appear on the cover or first page of your faxes.

9 Decide whether you want to add Exchange's Inbox to your StartUp group. If you don't need to receive faxes automatically at all times, select *Do not add Inbox to the StartUp* group. Click *Finish* in the Wizard's last dialog box, then *Close* in the Microsoft Exchange Settings dialog box.



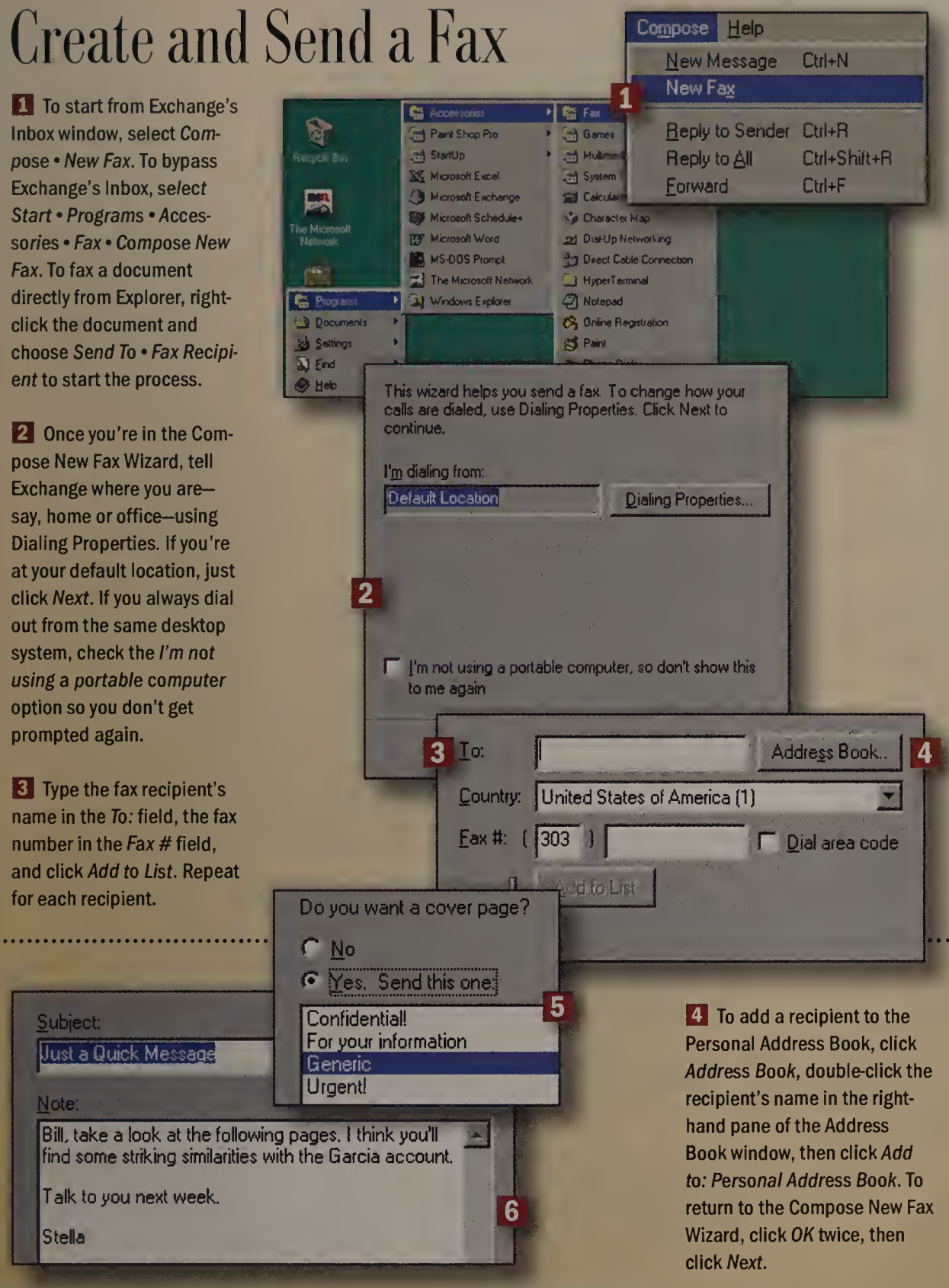
Note: If you've installed portions of Exchange before, you may encounter these dialog boxes in a different order.

Create and Send a Fax

1 To start from Exchange's Inbox window, select *Compose • New Fax*. To bypass Exchange's Inbox, select *Start • Programs • Accessories • Fax • Compose New Fax*. To fax a document directly from Explorer, right-click the document and choose *Send To • Fax Recipient* to start the process.

2 Once you're in the Compose New Fax Wizard, tell Exchange where you are—say, home or office—using Dialing Properties. If you're at your default location, just click *Next*. If you always dial out from the same desktop system, check the *I'm not using a portable computer* option so you don't get prompted again.

3 Type the fax recipient's name in the *To:* field, the fax number in the *Fax #* field, and click *Add to List*. Repeat for each recipient.



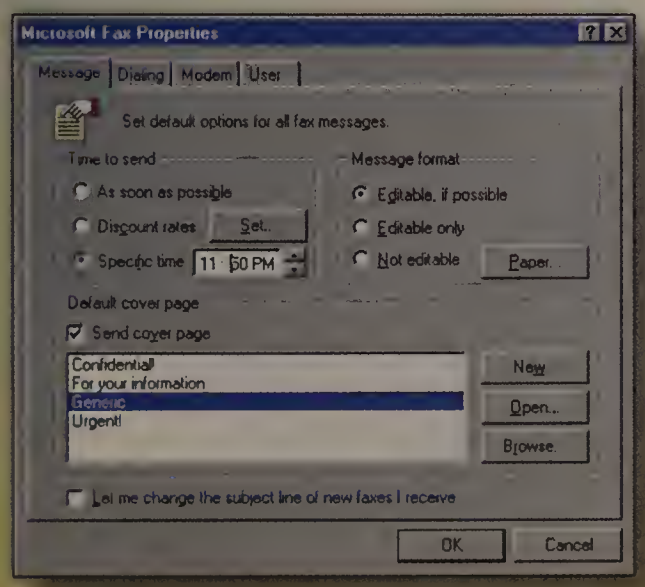
4 To add a recipient to the Personal Address Book, click *Address Book*, double-click the recipient's name in the right-hand pane of the Address Book window, then click *Add to: Personal Address Book*. To return to the Compose New Fax Wizard, click *OK* twice, then click *Next*.

5 Once you're back in the wizard, choose a cover page, or select *No* to send your fax without one. (If no cover pages appear, see "Fast Fax Fixes" for help.) Click *Next*.

6 Enter a heading in the Subject line and text in the Note field. If you're using a cover page, you can choose to start your note on the following page by unchecking *Start note on cover page*. To select a different cover page, click *Back*. After making a selection, click *Next*.

Schedule Your Faxes

Use the Fax Properties dialog box to set your fax's send time.



Receiving Faxes

Although you can send faxes without launching Exchange, you must have the program running to receive them. You can tell Microsoft Fax to answer the phone automatically, to prompt you to answer it manually, or to ignore all incoming calls (see "Exchange's Three Receiving Options"). If you set the program to answer automatically and you use the same phone line for both voice and fax calls, set the number of rings before the program answers relatively high (say, 4) so it won't grab your voice calls before you have a chance to answer.

Windows 3.11 Fax Setup

If you're using Windows 3.1, your fax-modem undoubtedly came with a "lite" version of some popular Windows fax program. If you're using Windows 3.11 or Windows for Workgroups 3.11, you can also try out Exchange's predecessor, Microsoft At Work Fax.

First, install Microsoft At Work Fax using the Windows Setup utility in Program Manager's Main group. Choose *Options • Add/Remove • Windows Components*, then click the *Select Files* button next to the Accessories option. Make sure that Microsoft At Work Fax appears in the right-hand window; if it doesn't, select it in the 'Do not install these files' drop-down list on the left, then click *Add* ➔. Click *OK* twice to accept the change, and have your Windows For Workgroups floppy disks at hand so you can provide any files Windows Setup may request. Exit, and to complete the installation, start the Fax applet in Control Panel. If prompted, tell At Work Fax if you'll be using Microsoft Mail for e-mail or just for fax. Select a modem in the 'Installed Modems' drop-

LS-120 diskettes require compatible drives. The circle-pyramid logo is a trademark of 3M. ©3M 1996

Larger files. Overcrowded hard drives. Piles of diskettes. Sound familiar? Now you can reliably meet your high capacity storage needs. Introducing the 3M brand LS-120 laser servo 120 MB diskette, the next standard in diskette technology. It works like the diskettes you're using now. Only it's faster and it holds more. Up to five times faster and holds 80 times more. Multi-media presentations. Downloaded Internet files. Large database files.

What's more, new LS-120 drives also read and write your current diskettes up to three times faster. No wonder more businesses protect important information on 3M brand data storage products than on any other brand. Look for the new LS-120 drives built into new Compaq PCs or available as an option. For information call 1-800-888-1889, ext. 4001, e-mail us at datastorage@mmm.com, or visit our Web site at www.mmm.com/datastorage.

TM

The reasons for our new 120 MB diskette just keep stacking up.

3M *Innovation*

Circle 4 on reader service card

down list, click *Set as Active Modem*, then click *OK* (if no modems appear in the list, click *Add*. Enter your fax phone number when prompted, then click *OK* twice. That's it.

Sending and Receiving

As with Exchange, you have more than one way to send a fax using Microsoft At Work Fax. The simplest method is to select At Work Fax from Windows' list of available printers (in *File•Print*), then 'print' your document to send it. Alternatively, transmit a document as an e-mail message or fax by choosing *File•Send*.

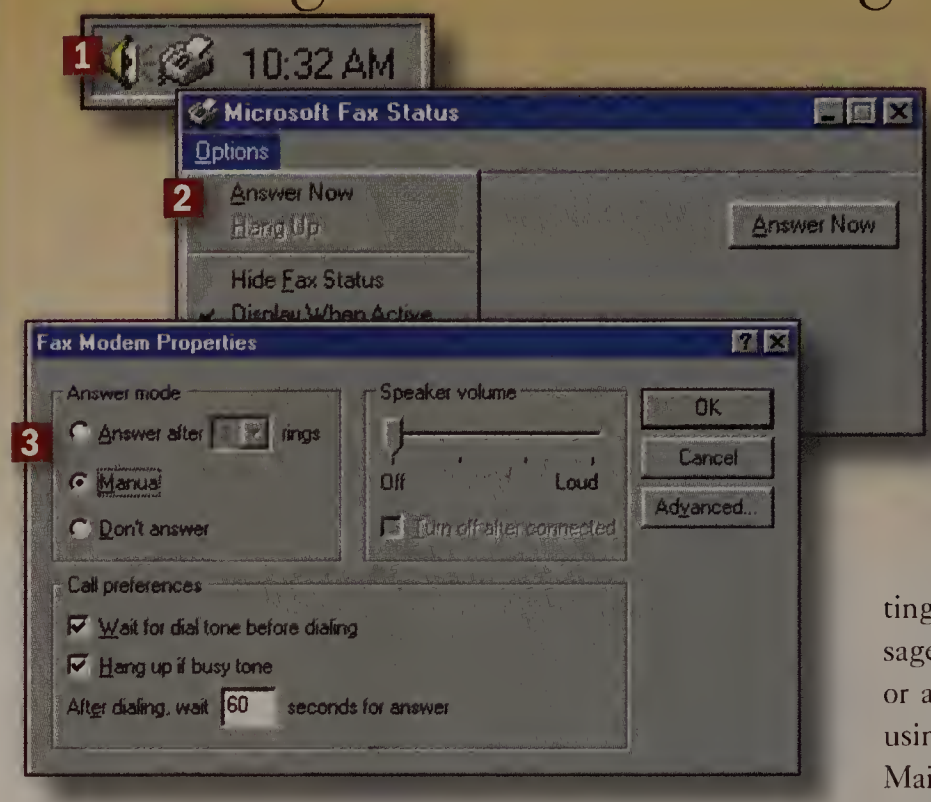
You can also create a fax from within Microsoft Mail: Launch the Mail program in Program Manager's Network group, click *Compose* to display the Send Note window, then click *Address*. Next, click *New* , choose *Microsoft At Work Fax*, and click *OK* to bring up the fax addressee window (which, oddly, is titled New User). Fill in the Alias, Fax Number, and Name on Coverpage fields, click *Add Names* if you want to save the entry permanently to your Personal Address Book, and click *To* twice. Enter a subject and message in the appropriate fields; click *Send*.

Although less refined, At Work Fax's send options are similar to Windows 95's fax software. At Work Fax lets you schedule faxes for later delivery or when long-distance rates are lower. The cover page options are comparatively limited; adding a bit-mapped logo to the default fax page is the only design option available. To set the send options for an individual fax, select *Options•Fax* in the Send Note window; to make your settings the default for all messages, check *Save as Defaults*, or access the same dialog box using *Fax•Options* in the main Mail window.

Receiving faxes is simple: Start Microsoft Mail, select *Fax•Mode*, and choose one of the three Answer Mode options. To make sure At Work Fax is always ready to receive, select *Fax•Mode•Auto Answer•OK*, and add Mail to Program Manager's StartUp group.

Scott Spanbauer is a contributing editor for PC World.

Exchange's Three Receiving Options



1 Click the *Fax* icon in the Taskbar to open the status window.

2 Select *Options • Modem Properties*.

3 Select *Answer after* (and enter the number of rings), *Manual*, or *Don't answer*, then click *OK*.

TIP

ADDRESS BOOK

If you regularly send faxes to the same people, use Exchange's Address Book (*Tools • Address Book*). Name, address, department, and voice phone number information you enter will feed into the cover page the next time you select those recipients, saving you manual entry. Word, Schedule+, and Exchange all come with address book features, but Exchange can use only its own Address Book; it can't import addresses from another program. Also, if you have two or more delivery methods for a recipient (such as fax and e-mail), you'll have to create, and clearly identify, separate entries in the Address Book for each. In the Address Book dialog, select *File • New Entry*.

FAST FAX FIXES

Even if you do everything right, things can still go wrong. Here are solutions to some common faxing trouble spots.

How can I avoid COM port conflicts?

If you try to run a 16-bit communications program or an online service's access software while Exchange or a third-party fax program is monitoring the modem for incoming faxes, you'll get an error saying the COM port is in use. You'll need to close the fax program, run your other communications task, then restart fax reception. If you're sticking with a less accommodating 16-bit program, you can relinquish the port temporarily: Open the status window, select *Options • Modem Properties • Don't answer*.

How do I find mysteriously disappearing faxes?

You know the fax came in, or went out, but you can't find it in your Inbox or Sent folder. And sometimes fax programs hiccup and lose a page or two. If you want to find a missing fax on your hard disk, find out what extension your program's fax files use (check the manual), and then search your hard disk for files having that extension.

What happened to my cover page?

Did you discover after backing up your hard disk that Microsoft Fax's cover pages vanished? They're still there, but you can't see them because of a bug in Exchange. Microsoft had not yet provided a fix by the time this story went to press, but you can make your cover sheet visible again by right-clicking the fax's .cpe file in c:\windows in Explorer, selecting *Properties*, and checking *Archive*.

Create Hot Graphics for the Internet with COREL Xara!™

EC&I, U.S.A.

Best New Product of the Year
PC Plus, U.K.

Best Buy
PC Direct, U.K.

Seal of Excellence
Electro Graphix, N.Z.

Windows® 3.1x
Windows® 95
Windows NT™

Features:

- Anti-aliasing
- Interactive graduated transparency
- Stepless graduated fills
- 32-bit speed and performance
- Drag-and-drop fonts, line styles, colors, clipart, textures and bitmaps
- 3D perspective for vector and bitmap objects

Incredible Value!

- 10,000+ clipart images
- 500+ photos
- 500 TrueType and Type 1 fonts
- 250 textures

Circle 76 on reader service card

Finally, the Internet graphics package you've been waiting for. An ultra-fast and highly intuitive illustration program, CorelXARA's 32-bit power and full anti-aliasing let you create stunning photo-realistic images and dazzling graphics for the World Wide Web in record time. Featuring a wide selection of flexible drawing and editing tools plus support for transparent and interlaced GIF file formats, with CorelXARA, you're limited only by your imagination.

PC Connection® **$199.95***
1-800-800-6957

KUR-0229-US

*US$ plus applicable taxes.

Enter the Corel $3,000,000 World Design Contest! (September '95 to July '96)
To receive a faxed copy of the contest rules and an entry form, please call:
1-613-728-0826, ext. 3080, Document # 1125. To leave a message:
1-613-728-0826, ext. 81609. To send a fax: 1-613-728-2891.

COREL
http://www.corel.com
Call now for faxed literature:
1-613-728-0826 ext. 3081
Document # 1114

Corel and CorelXARA are other trademarks or registered trademarks of Corel Corporation in Canada, the United States and/or other countries.

Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Designed for Microsoft Windows 95

intel inside pentium PROCESSOR

Leading Pentium processor/PCI performance at an affordable price.

- Intel 75, 90, 100, 120 or 133 MHz Pentium processors
- Desktop and minitower packages
- 256KB cache
- 8-16MB RAM, expandable to 128 or 192MB
- EDO RAM on some models
- PCI/ISA architecture
- 420MB** high-performance Enhanced-IDE hard drive
- PCI integrated graphics accelerator and 1MB of VRAM standard, upgradable to 2MB or Matrox Millenium PCI graphics card with 3D acceleration and 2MB of WRAM, upgradable to 4MB
- Flash BIOS for easy upgrade
- Full plug-and-play capability
- Designed for Windows 95
- Preloaded HP DMI250 Desktop Management Interface
- Free three-year limited warranty for parts and labor[1]

from $1,469*

HP Vectra VL

Redefining network-ready PCs for the workgroup.

- Intel 75, 90, 120 or 133 MHz Pentium processors
- Leading Remote Management (HP DMI250) preinstalled
- PCI integrated 32-bit 10baseT Ethernet interface
- Network certified and preconfigured for Microsoft and Novell clients
- Parallel Transfer Driver preinstalled for faster LAN packet processing
- Standard 256KB second level cache
- 64-bit graphics accelerator (Cirrus Logic 5434) on PCI bus
- 1MB of video RAM standard, expandable to 2MB
- 8MB RAM, expandable to 192MB
- Enhanced-IDE controller on PCI bus
- 420MB** high-performance Enhanced-IDE hard drive
- 4 mass storage shelves (3 front accessible), 4 expansion slots
- Two 32-bit PCI slots
- Flash BIOS for easy upgrade
- Designed for Windows 95
- Free three-year limited warranty for parts and labor[1]

from $1,539*

HP Vectra XM

The ultimate PC for advanced business and technical applications.

- Intel 120 or 133 MHz Pentium processors
- Supports dual processing with secondary processor socket
- 512KB second level burst synchronous write-back cache
- Two 32-bit PCI slots, 1 PCI/ISA combo slot, 1 ISA slot
- 1,000MB** high-performance Enhanced-IDE hard drive
- Integrated 32-bit PCI Fast SCSI-2 and Enhanced-IDE interfaces
- Integrated PCI Matrox Millenium graphics card with up to 1600 x 1200 resolution
- 16MB of RAM standard, expandable to 256MB
- Integrated PCI 32-bit 10BaseT and Coax network interface
- Preloaded Desktop Management Interface (DMI)
- Free three-year limited warranty for parts and labor[1]

from $3,389*

HP Vectra XU

†In Canada, call 1-800-387-3867. *Average U.S. street price. Monitor not included. **Other capacities available. HP Vectra PCs come with MS-DOS® 6.2 and MS Windows for Workgroups 3.11 or Windows 95 or OS/2 or Windows NT included. [1]First year, on-site, 24-hour, next-day service. Second and third year, return to dealer. MS-DOS is a U.S. registered trademark and Windows and Windows NT are U.S. trademarks of Microsoft Corporation. Pentium and the Intel Inside logo are U.S. registered trademarks of Intel Corporation. OS/2 is a registered trademark of the International Business Machines Corporation. ©1995 Hewlett-Packard Company PPG425

The fastest PC available.

- Intel Pentium Pro 150 MHz processor with 256KB integrated cache
- Supports dual processing with secondary Pentium Pro processor socket
- 128-bit high performance memory architecture
- 16MB of ECC DIMM memory standard, expandable to 256MB with 8 DIMM memory expansion sockets
- PCI integrated Ultra SCSI Fast 20 interface with 20MB/s throughput
- 1,000MB** SCSI-2 high-performance hard drive
- PCI Matrox Millenium graphics card with 3D acceleration and 2 MB of WRAM, upgradable to 4MB or 8MB
- 7 mass storage shelves (5 front accessible)
- 6 expansion slots: 3 PCI, 1 PCI/ISA combo and 2 ISA
- 10 BaseT/100VG AnyLAN selectable PCI NIC with up to 100 Mb/s throughput
- Integrated 16-bit audio and 4X CD-ROM
- Microsoft Windows NT 3.51
- Free three-year limited warranty for parts and labor[1]

from $5,159*

HP Vectra XU 6/150

Exceptional performance and expandability at an affordable price.

- Intel Pentium Pro 150 MHz processor with 256KB integrated cache
- 128-bit high performance memory architecture
- 16MB of DIMM memory standard, expandable to 256MB with 8 DIMM memory expansion sockets
- 1,000MB** Enhanced-IDE hard drive
- PCI Matrox Millenium graphics card with 3D acceleration and 2MB of WRAM, upgradable to 4MB or 8MB
- 7 mass storage shelves (5 front accessible)
- 6 expansion slots: 3 PCI, 1 PCI/ISA combo and 2 ISA
- Integrated 16-bit audio and 4X CD-ROM
- Microsoft Windows NT 3.51 or IBM OS/2 Warp
- Free three-year limited warranty for parts and labor[1]

from $4,519*

HP Vectra VT

Since Compaq and IBM don't get the concept of 'value pricing,'

HP PCs would like to shed some light on the subject.

What it *doesn't* mean: bare-bones PCs with pared-down prices. What it *does* mean: PCs with all the features you need for much less than you'd expect to pay. Five prime examples are highlighted here. Compare their features and prices with the other leading brands, and you'll see why HP is the only one inviting comparison. Our entire line represents the best values in the business PC market. From value-priced Pentium™ processor-based PCs to our blistering hot, dual Pentium Pro processor-based HP Vectra XU PC.

Call 1-800-322-HPPC, Ext. 1107,† for more information or the name of your nearest HP reseller. Or visit us at http://www.hp.com/go/vectra. For once, more *is* less.

HEWLETT® PACKARD

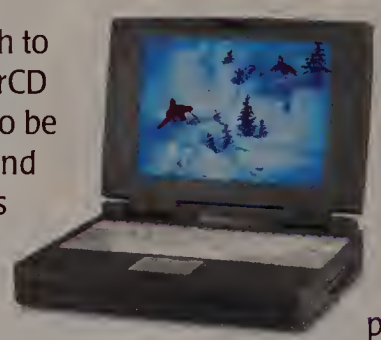
AS LOW AS ...

$2250

POWERCD 8300, P75, DUAL-SCAN DISPLAY, 8MB RAM 540 H.D.

SEE US AT
COMDEX
SPRING
BOOTH #749
JUNE 3-5, 1996
McCORMICK PLACE

Think of it as a supercomputer with a touchpad.



Move over Hal. Because AMS has given birth to a new, portable giant. We named it the PowerCD Notebook. With a Pentium® Processor waiting to be unleashed, 40MB of RAM ready to perform, and storage space for up to 1.3 Gigs, the PowerCD is truly one super computer.

As one of the most complete, most powerful, feature-rich, multimedia notebooks available today, this small but mighty powerhouse is fully optimized for 75 to 166 MHz Pentium® Processors and will blow the lid off other notebooks. There's a 256KB external level II secondary cache that gives you a command performance every time. Plus, an internal PowerCard port for networking, high-speed communications and impressing your friends. With the PowerCD's ability to display direct to TV, or effortlessly handle full-screen MPEG video and CD-quality sound, you can give a presentation that's worthy of a sequel.

There you have it. Power. Performance. Features. Available now from AMS. And nobody can touch it. For more information, call 800-515-8203.

- PCI Plug-N-Play System Supports 75 to 166 MHz Pentium® Processor-based CPUs
- Internal 2X/4X/6X CD-ROM with full Digital Audio/Video Support
- 2MB VRAM and 256 Level II Cache for Outstanding Performance
- Supports up to 40MB of RAM and over 1 Gig of Hard Disk Storage
- Built-in PC Card Type III, Wireless Infra-Red and NTSC Direct TV Ports
- Support for Internal Fax/Modem, MPEG Module and AMS PowerCards
- Optional PowerCard Modules Include Ethernet, SCSI, ISDN and More
- Full 3 Year Parts and Labor Warranty

Circle 27 on reader service card

LIFETIME TECH SUPPORT
800-886-3536
818-813-2391

intel inside pentium PROCESSOR

AMS Tech
Power To Go.
800-515-8203
Contact us via Compuserve: GO AMSONLINE
See us on the web: http://www.amsnote.com
TEL: (818) 814-8851 • FAX: (818) 814-0782

THREE YEAR WARRANTY 3
Parts & Labor Warranty

24 HOUR BBS
818-813-2383
818-813-2384

Intel, the Intel Inside logo and Pentium are registered trademarks of Intel Corporation. All other trademarks and registered trademarks are the property of their respective companies. Not responsible for errors in advertising. Prices and specifications are subject to change without notice.

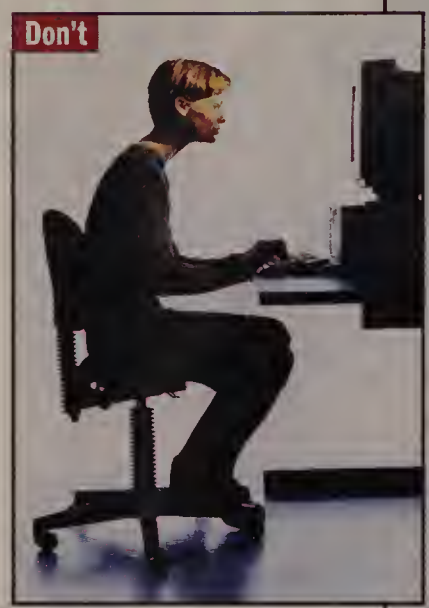
HANDS-ON GUIDE TO NO-PAIN Computing

It's no secret that computing can be hazardous to your health. Here's what to do about it right now.

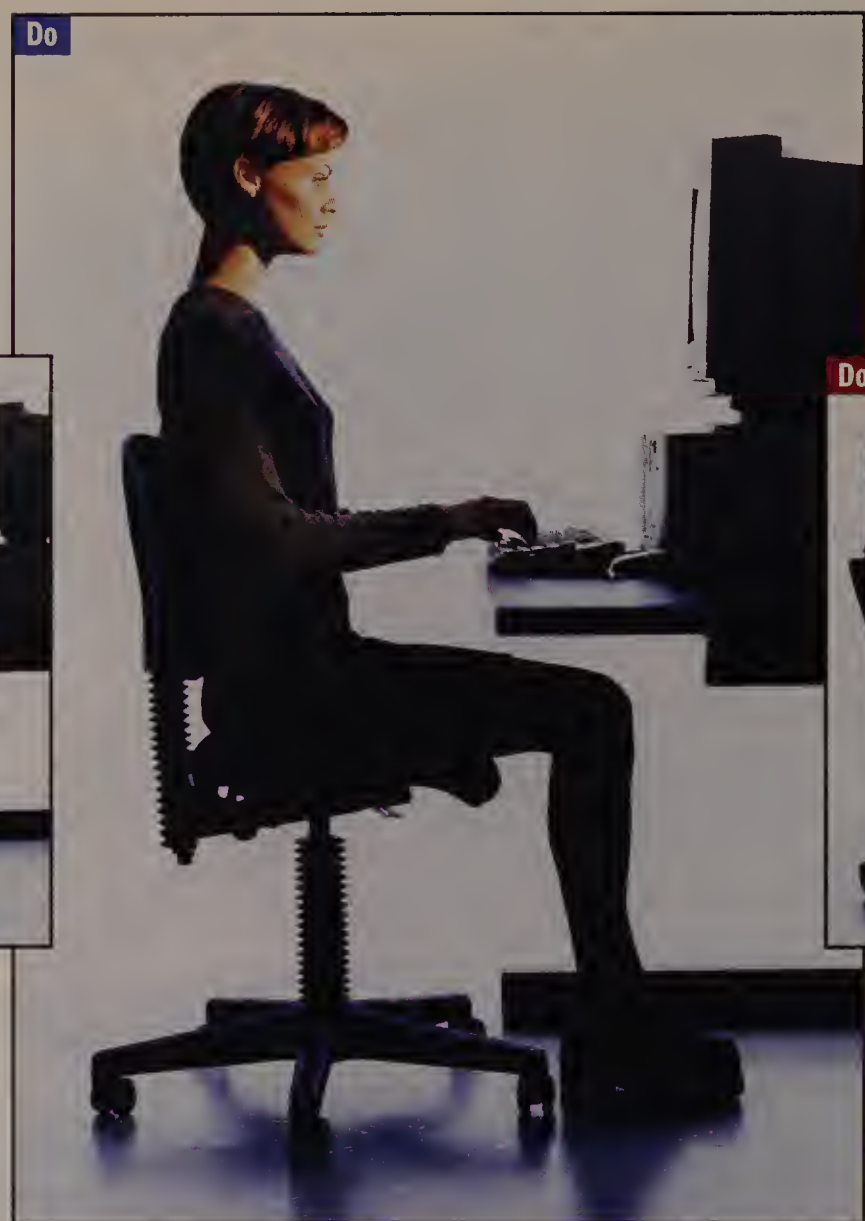
ABOVE: DAVID MARTINEZ; RIGHT: SETH RESNICK

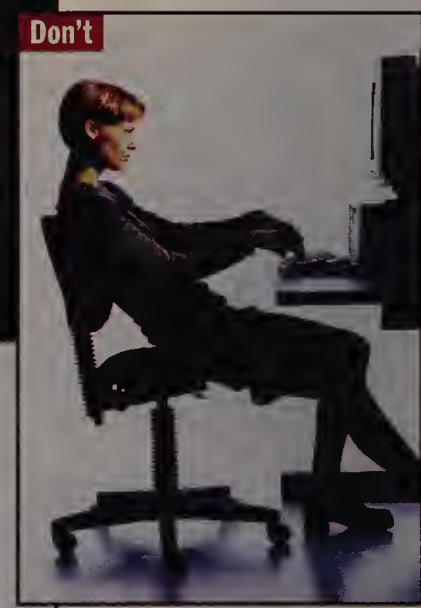
Steve Hatch, a longtime copy editor at the *Boston Globe*, started noticing the pain two years ago. "My left arm and wrist started to ache, and I developed these marble-size lumps on my arm," Hatch recalls. "Nights I'd have to go home and ice my hand and shoulder." The pain became debilitating, and he began to miss days at work. His arms in pain and his career in trouble, he finally consulted an ergonomist. The advice he got: Change your work habits or else. That warning was enough to start him on the road to recovery.

Maintain Good Posture



To maintain good sitting posture and aid circulation, keep your feet flat on the floor. Avoid leaning forward and hunching your shoulders.





Slouching strains the natural curves in your back. Adjust your chair height so your weight is shifted forward off your spine.

Now an evangelist for healthy PC work habits, Hatch says, "The odd thing is that everything can be going along fine for years—I'd been working [on computers] since 1981 with no problems. But you get a little older, a little out of shape, work a little longer, and boom, you get problems."

Don't Ask Your Boss

The most remarkable thing about Hatch's story is how unremarkable it is. Bob Bettendorf, president of the Institute for Office Ergonomics in Manchester Center, Vermont, estimates that at least 30 percent of computer users suffer some kind of work-related discomfort. Such problems range from slight numbness in the hands to severe strain in the lower back. Ergonomists and government officials put the medical costs related to ergonomically unsafe workplaces in the tens of millions of dollars. To combat this, a number of companies, including the New York Times Corporation and the San Francisco–based Wells Fargo Bank, have instituted full-scale ergonomics programs.

The good news is, most work-related injuries are preventable or reversible. According to ergonomists, only 5 percent of the cases they see are serious enough to require medical attention. "The vast majority of people having problems in the office environment suffer discomfort that can be resolved by some simple ergonomic fixes and some right posture," says Bettendorf.

But you can't wait for your boss or the federal government to do something about workplace hazards. The responsibility for avoiding and treating what's called *repetitive strain injury* falls squarely on your shoulders. So, what are *you* going to do?

Wrist Arrest

The bulk of media attention on computer-related maladies has focused on the wrist and its susceptibility to carpal tunnel syndrome, and with good reason.

"The wrist is where everyone gets into problems," says John Kella, a full-time ergonomist at the *New York Times*. Why, when workers have been typing for decades, have they only recently started suffering from RSI? There are two plausible reasons: First, computer keyboards do not have the typewriter's distinct "return" mechanism, which forced people to type more slowly and to pause after every line. Second, computer keyboards nowadays are often larger than those on manual typewriters, requiring fingers to stretch farther with each keystroke.

What advice does Kella give his clients? For one thing, relax. Make sure you keep your fingers gently curved, without pounding at the keyboard. Your wrists should be in a neutral position, without flexing up or down. Each elbow should form something close to a right angle. The proper furniture can also help. Correctly adjusted arm rests should keep your wrists supported whether you're typing or using your mouse.

Kella also recommends 30-second pauses as you work, during which you can consciously check each at-risk body part. "As soon as you feel a tightness or a cramp, you're on top of it."

Neck Strain, Back Pain

The wrist isn't the only endangered part of your body. You should also keep a regular check on the way you hold your neck, back, and shoulders.

The height of the chair is the key factor here, according to David Rempel, who is assistant professor of medicine at the University of California at San Francisco. "Be sure not to let your shoulders shrug as you reach for the keyboard," Rempel says. "They shouldn't be rounded forward, and you shouldn't be reaching for either your keyboard or your mouse."

Keep your back upright or inclined slightly forward from the hips. Maintain the slight natural curve of the lower back. Keep your head directly over your shoulders without straining either forward or backward, and approximately an arm's length from the computer monitor. Your shoulders should stay down, with the chest open and wide.

In addition, adjust your chair so your thighs are parallel to the ground. Your feet should be firmly planted on the floor. Shorter people or those working at high fixed-desk heights should use a footrest.

For neck health, think about the distance from your screen. "Make sure you can see characters clearly," Rempel says. "Use a document holder right next to the monitor." As a rule of thumb, the top of the monitor should be at about eye level.

David Rempel, assistant professor of medicine at the University of California at San Francisco, demonstrates the use of a calibration jig. This device holds the wrist and forearm in the standard position.

For Your Eyes Only

Be sure to pay attention to your eyes. The importance of proper care of the eyes in the workplace is not fully appreciated, says Kella. Inadequate lighting and poor work habits usually result in eyestrain, headaches, and fatigue, particularly at project-deadline times, he says.

Kella's advice is to train yourself to rest your eyes. "Don't stare at one fixed focal

Danger at Your Fingertips Revisited

More than three years ago, *PC World* looked at what state and federal officials were doing about the increase in computer-related ailments in the workplace ("Danger at Your Fingertips," May 1993). At that time the federal Occupational Safety and Health Administration was reviewing draft guidelines for workplace ergonomic standards.

Since then, developments have come to a screeching halt. Under heavy attack by Congress and powerful business lobbying groups, OSHA has abandoned proposals to protect workers from repetitive strain injuries. On August 4, 1995, the House passed HR 2127 (the Appropriations Bill). Section 105 of this bill clearly states that OSHA may not use federal funds for the development or issuance of any standard regarding ergonomic protection. So, unless the political climate changes, it appears we are waving good-bye to a workplace standard.

OSHA advocates say they're victims of Congress's antiregulatory Republican majority. "If you take a look at who's actually writing the legislation, you see it's lobbyists for the very people who don't want to see a standard—UPS and companies like that," says Cheryl Byrne of OSHA public affairs. Responding to claims that the legislation would be too costly for industry to implement, Byrne says, "Many cures for ergonomic problems cost nothing at all, or next to nothing."

That's not how Rep. Cass Ballenger (R-N.C.) sees it. Ballenger, chair of the House Subcommittee on Workforce Protection, criticizes OSHA for being too broad in its proposals, for lumping grape growers with computer companies. "It's fine for a big business, but the guy who's got five employees can't afford these regulations."

Neal Taslitz, executive director of the National RSI Foundation, is outraged at the passing of Section 105. "This was the best kept secret," he says. "The government had ample opportunity to move forward with this, but they don't consider ergonomic problems to be real." Neal cites figures from the *New York Times* of October 9, 1995: Workers' compensation claims related to RSI are up a staggering 770 percent from ten years ago, at an average cost of $43,500 per claim.

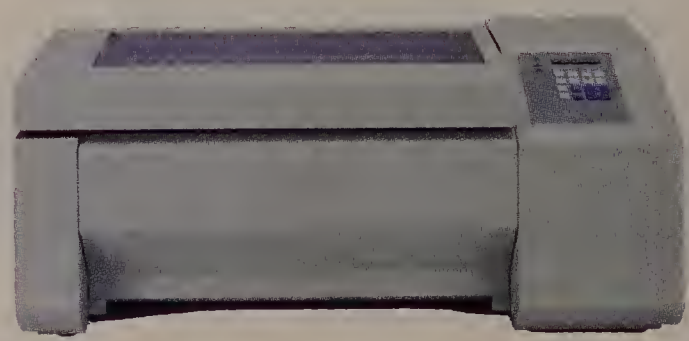
Sen. Paul Simon (D-Ill.) appealed directly to Secretary of Labor Robert Reich to authorize the establishment of an independent medical task force that would study and publish a set of voluntary ergonomic guidelines. OSHA's response? This proposal "is not consistent with Congressional intent," says Joseph Dear, OSHA assistant secretary. Taslitz urges folks to put on the pressure. He will forward letters of protest to the appropriate parties in Washington. You can also write your local government representative or write to us at *PC World*. (See page 14 for contact information.)

Neal Taslitz, Executive Director, National RSI Foundation
200 S. Desplaines Ave., Chicago, IL 60661
800/363-7747, 312/258-0888, 312/258-0090 (fax)

You can download the Appropriations Bill from the Thomas Web site (http://thomas.loc.gov/) by clicking the link to 104th Congress Bills and typing HR2127 as your query command.

ANNOUNCING THE *MOST RELIABLE,* HIGHEST-PERFORMING, *INVOICE* HANDLING, BAR CODE *PRINTING, DATA* PROCESSING, WITH THE *LOWEST COST* OF OWNERSHIP IN ITS *CLASS, LINE* IMPACT PRINTER *FROM TALLY!*

T6045 line impact matrix printer **under $4,500!**



PC MAGAZINE EDITORS' CHOICE™
November 7, 1995
Mannesmann Tally T6045

The T6045 is an entry level line impact matrix printer that's short in cost-but not in performance. From general data processing to bar codes & other industrial graphics, the T6045 can print up to 450 lines per minute, and can handle a 80,000 pages a month with ease.

Versatility is the T6045's middle name. It comes equipped with ***three*** industrial graphics languages standard plus POSTNET, giving you a variety of options for graphics handling. And, with a standard parallel & serial I/O or optional Twinax/Coax interface, most network setups aren't a problem either.

In the cost of ownership category, the T6045 triumphs, ***saving up to $1,663 over its' closest competitors*** in the first year of ownership. Isn't it time you printed on a Tally?

JUST CALL 1-800-843-1347 EXT. 575 for more information, or contact your local reseller.

Tally® printers

[Making An Impact On The Way You Print]

a **mannesmann** *technology company*

©Mannesmann Tally Corp. 8301 South 180th Street, Kent, WA 98064. Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries. All other listed trademarks are trademarks or registered trademarks of their respective companies.

Circle 142 on reader service card

Trumpcard Breaks the Sound Barrier.

These new multi-function Sound Cards from Ositech will blow you away.

K◆ Ethernet+Sound Q◆ Modem+Sound

Liven up your presentations with CD Quality Digital sound and have your choice of either a 28.8 Kbps Data/Fax/Cellular Modem or Ethernet Adapter in a single, convenient card.

The King and Queen of Diamonds are the latest additions to Ositech's award winning TRUMPCARD family.

Our leading edge multi-function technology gives you simultaneous access to Modem and Sound (with the Q◆) or to Ethernet and Sound (with the K◆), while occupying just one Type II PCMCIA Slot.

Play your Trumpcard.

OSITECH
"The PC Card Innovators"

Toll free 1-800-563-2386
Tel:(519)836-8063 Fax:(519)836-6156
www.ositech.com

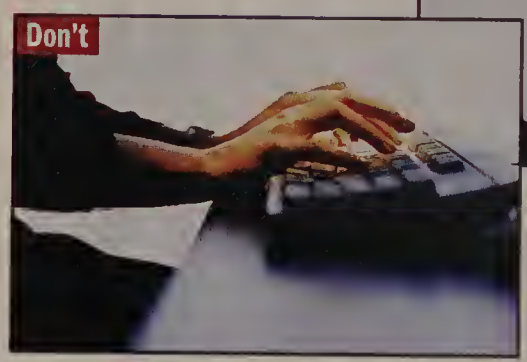
ETHERNET+ MODEM+CD ROM | ETHERNET+ SOUND | MODEM+ SOUND | ETHERNET+ MODEM | ETHERNET+ CD ROM | 28.8 MODEM+ DPI™ | ETHERNET with ETHER-BOOST™

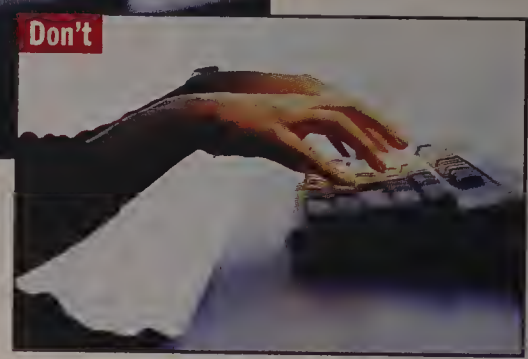
And with our special evaluation pricing get a K◆ for $199 or a Q◆ for $299. Call Ositech today to take advantage of this limited time offer (April 1 - May 31/1996)

Trumpcard, Ace, King, Queen, Jack, Ten, Five, and Four of Diamonds, DPI and ETHER-BOOST are trademarks of Ositech Communications Inc. All other names are trademarks or registered trademarks of their respective companies. *Some conditions and restrictions apply. Contact Ositech for further details.

Circle 167 on reader service card

Keep Wrist Level Neutral





When typing, maintain a straight wrist level (above) to avoid tension. Keep your wrists relaxed, without flexing up or down, and gently curve your fingers.

distance," he says. "Eye balancing is very important." Exercise your eyes regularly and close your eyes periodically. Look at something far away, then focus on something close. When you're working with text, choose large, sans serif fonts like 12- or 14-point Arial.

A flicker-free sereen is essential. Look for a monitor and graphics board with at least a 72-Hz refresh rate. This rating refers to the speed at which the screen's image is redrawn. The faster the refresh rate, the less eye-exhausting screen flicker you'll detect. Although 72 Hz is generally considered flicker-free, more sensitive souls may notice flicker even at higher rates. If you fall into this category, you'll want to get a graphics board and monitor capable of really high refresh rates, say, 85 Hz and up.

Kella also advises regular visits to a doctor to make sure one eye isn't stronger than the other. If this is the case, make sure you correct the disparity. You risk forcing the stronger eye to do all the work and subjecting it to additional strain. Screen glare, which adds to eyestrain, is another significant problem. The solution: Adjust the screen angle to cut down on reflection. Overly bright overhead fluorescents are often the culprit. If nothing else works, an antiglare screen might make a difference.

Gimme a Break

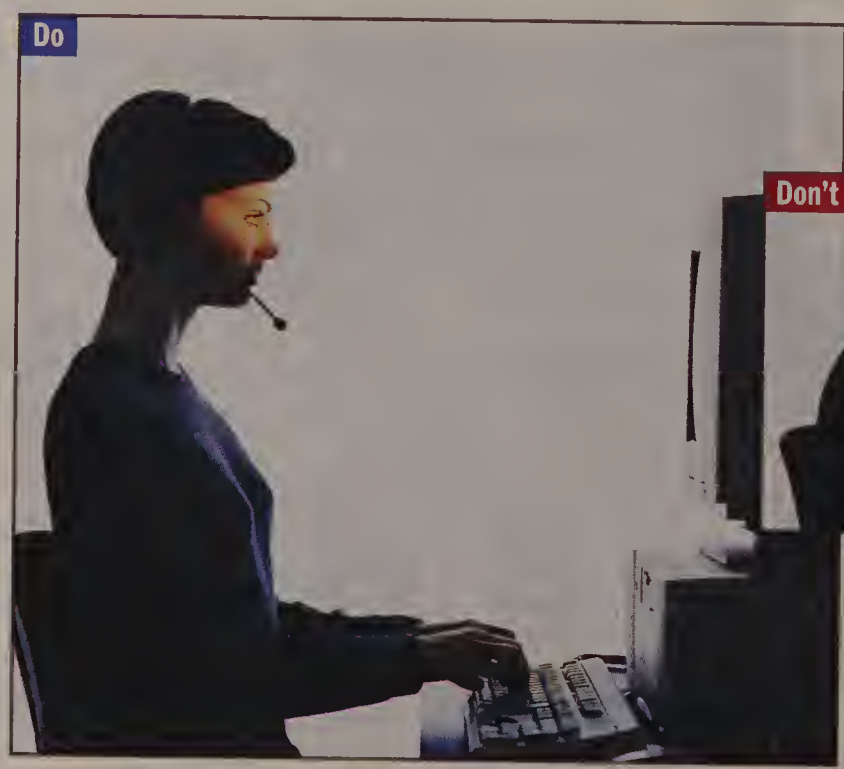
Your whole body will benefit if you take a break from your keyboard every 30 minutes. Just because you aren't typing doesn't mean you have to stop working: Try getting up to talk to someone instead of sending that e-mail. Some workers install software on their desktop that sounds ominous music every half hour to remind them it's time to break the trance. Ergonomists encourage managers to help employees develop alternative tasks that let them move around.

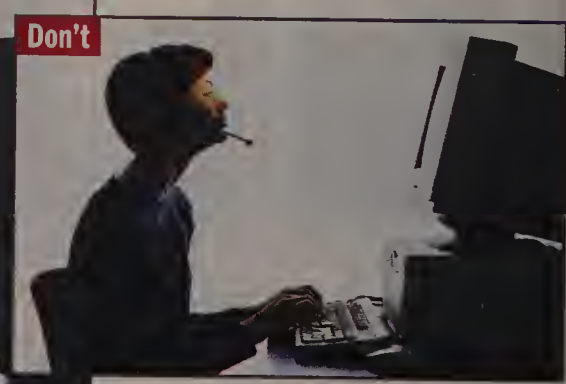
During these breaks, you can also try performing some of the following exercises, which will help to reduce strain on the carpal tunnel area:

- Rest your forearm on the edge of the desk, palm down. Grasp the fingers of the resting hand and gently bend your wrist back for 5 seconds. Repeat with other hand.
- Gently press your hand against the table and stretch your wrist and fingers for 5 seconds. Repeat with other hand.
- Tightly clench both hands and release, fanning and stretching your fingers out.
- Sit upright in your chair with your feet flat on the floor. (If your chair has rollers, make sure it is stable). Lower your head and slowly roll your body as far as you can toward your knees. Hold this position for 10 seconds. Push yourself up with your leg muscles. Repeat three times.

Another exercise tip that many workers swear by: Keep a squeeze toy deskside, or use some Silly Putty or Play-Doh to give your hands a little workout once in a while.

Be Kind to Your Eyes





Top of monitor should be at eye level or slightly lower (left). Keep your head upright without tilting or stretching your neck, about an arm's length from screen.

DAVID MARTINEZ

DELL DIMENSION

Reliable PCs For High Performance Computing

DELL DIMENSION™ XPS P133c
133MHz PENTIUM® PROCESSOR

- Mini Tower Model
- 16MB EDO Memory
- 256KB Pipeline Burst Cache
- ★ **1.6GB Hard Drive [10ms]**
- 15LS Monitor (13.7" v.i.s.)
- ★ **9FX Motion Graphics Accelerator with 2MB VRAM**
- 6X Multi-session EIDE CD-ROM Drive
- ★ **MS® Office Professional with Bookshelf for Windows® 95**
- Microsoft® Windows 95/30 Days Free Support/MS Mouse
- ★ **3 Year Limited Warranty†**
- ★ ***Upgrade to 32MB of EDO memory for only $399 more.***

Business Lease◊: $81/Mo.
Order Code #500252

$2199

BEST BETS FOR PC BUYERS

RANK	OVERALL RATING	MANUFACTURER AND MODEL/ PRICE	CONFIGURATION	COMMENTS
1	8.77	Dell Computer Dimension XPS P133c $3,249 w/ monitor	Minitower, 133-Mhz Pentium, 16MB of memory, 1GB hard disk, quad-speed CD-ROM	Dell provides strong and preloads Mi- ing it
2	7.70	[illegible]		

BUSINESS WEEK CONFIRMS WHAT YOU ALREADY KNEW.

In search of the perfect PC? Just ask *Business Week*. In its First Annual Computer Buying Guide, the Dell Dimension XPS P133c was rated #1 among the "Best Bets for PC Buyers."* That's another best for Dell, a company famous for delivering the best performance, the best features, the best value. But that's probably not news to you, is it?

DELL®

TO ORDER, CALL

800-695-3241

In Canada,* call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/

Keycode #03139

intel inside pentium

Designed for Microsoft® Windows 95

*Tests conducted by the National Software Testing Laboratories, a division of McGraw-Hill, Cos. Published in *Business Week*, November 6, 1995. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., 2214 W. Braker Lane, Suite D, Austin, TX 78758. ◊Business leasing arranged by Leasing Group, Inc. *Prices and specifications valid in the U.S. only and subject to change without notice. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. MS, Microsoft, Windows and the Windows logo are registered trademarks of Microsoft Corporation. ©1996 Dell Computer Corporation. All rights reserved.

Who Do You Trust?

Many specially designed products on the market claim to be ergonomically correct. But there's a lot of disagreement about what works effectively and what doesn't, and there's no guarantee that any of these devices will work for you.

For one thing, people come in all shapes and sizes. No particular mouse, for instance, is going to be right for every user. You might want to check out the innovative ergonomic mice developed by Contour Design, which come in three sizes (Contour Designs, 510/829-3220, *Reader service no. 641*).

You could also try using a trackball or touchpad to see if it suits you better. If you're tempted to make a large investment in the latest, greatest orthopedic chair, you might first want to investigate the option of buying a sturdy adjustable chair, which is most likely cheaper and could probably serve you just as well.

Some ergonomists believe the specialized products may solve one problem only to create new ones elsewhere. For instance, while certain ergonomists endorse the split and slanted keyboard, saying it allows a more natural position for wrists, others contend the wider keyboard tray forces users to distort their posture when they type.

Portable PCs also get a thumbs-down. People often work with them in odd places (on hotel beds or airplane tray tables, for example) with their wrists and arms improperly positioned and the screen at the wrong angle and distance for comfortable reading. In addition, the portables' tiny keyboards cramp hands, and their undersize screens cause eyestrain. One compromise: If you must work with a portable, whenever possible use an external monitor and a docking station parked on a real desk.

Despite the lack of enthusiasm for some of these products, however, at least one device gets an unequivocal thumbs-up from ergonomists: phone headsets, which prevent neck strain.

It's up to you to experiment with the latest gadgets to see if they fit your needs. Work with equipment that adjusts to suit *you* as fully as possible. Don't contort your body to suit the equipment.

Convincing your company of the wisdom of investing in a comprehensive ergonomics consultation is a very good idea. If you're looking for some numbers to feed your boss, here are some costs from the Repetitive Strain Institute in San Jose, California. A workstation review costs $60 per employee. The Muscle Learning Therapy program with three 1-hour sessions costs $150 per employee. Sure, the initial outlay is not cheap, but the expense comes to a lot less than long-term workers' compensation.

Call to Arms

Copy editor Steve Hatch's story fortunately has a happy ending. After a year of treatment, he is almost fully recuperated and has incorporated healthy practices and alternative tasks into his work routine. "Once or twice a month I get a small pain, and I respond to it immediately." he says. "The key to recovery was learning that the pain was something I had to respond to, or it could've destroyed my career."

Taking personal responsibility and educating yourself proactively is the only way to avoid ergonomic problems. It's literally in your hands. "If I had not done something," says Hatch, "I would be on disability today."

Doug Fine is a San Francisco–based writer who covers cyberspace, international politics, and the environment.

Ergonomics and Online Resources

Interested in learning how to practice healthy computing? Your PC could be the best place to start. The Internet contains a slew of ergonomic resources, some of them good, some the virtual equivalent of snake oil. Here are a few of the best.

Absolutely essential is the Safety Related Internet Resources site (http://www.sas.ab.ca/biz/christie/safelist.html). This World Wide Web home page lists just about every Internet site and link an ergonomist, RSI sufferer, or hypochondriac could want, including mailing lists and newsgroups.

ErgoWeb (http://ergoweb.mech.utah.edu/) is also particularly good. It introduces you to an extensive collection of ergonomics standards, guidelines, reference materials, biomechanical analysis tools, case studies, and other resources. This site also lets you subscribe to a couple of members-only ergonomics discussion groups.

Also worth a look is System Concepts Newsletter (http://www.system-concepts.com/contents_page.html), an electronic magazine run by a consultancy based in London, England. It offers news, information, and free resources, along with feedback from readers and analyses of ergonomic problems from consultants.

The University of Virginia's site (http://www.virginia.edu/~enhealth/ergonomics/toc.html) offers quizzes and practical tips for stretch breaks. The links lead to educational hypermedia and information about defining and evaluating ergonomic risks.

The University of Nebraska (http://www.engr.unl.edu/ee/eeshop/rsi/html) offers book references, links to Internet resources, and illustrated tips on how to avoid incorrect posture at your PC.

You might want to venture away from the World Wide Web and subscribe to mailing lists and newsgroups. Sorehand, for instance, is populated primarily by individuals who have a workplace injury. To subscribe, just send an e-mail message to listserv@ucsfvm.bitnet or listserv@ucsfvm.ucsf.edu, leave the subject line blank, and in the body of the message enter sub sorehand, followed by your full name.

Use the same technique to subscribe to C+Health (listserv@iubvm.ucs.indiana.edu). Subscribers are encouraged to share information, advice, and experiences.

Additional mailing list options can be found from RSI-UK (http://www.demon.co.uk/rsi). This Web site has many links covering all areas of the globe. A special link for U.S. readers lists RSI doctors and provides essays and ergonomic facts and figures.

Those with access to Usenet should take a look at misc.health.injuries.rsi.misc and alt.med.fibromyalgia, which include frequently asked questions, updated monthly, about typing-related injuries.

Where is it written
that an office has 4 walls?

That finances must be
plotted on desktops?

That business letters
are always on paper?

That faxes and e-mail
can only be sent from buildings?

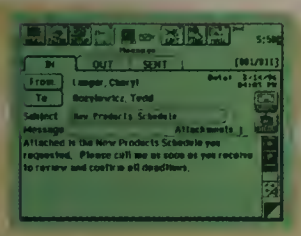
ZAURUS™

All the things one person has to do,
all in 13 pocket-sized ounces.

COMMUNICATION

Access.

Now, just because you're out of the



office doesn't mean you're out of touch with important information.

E-mail.

Zaurus is the powerful communication tool that gives you an amazing range of e-mail options. Zaurus's built-in software lets you access Microsoft Mail™ and cc:Mail™

from the road.

Go on-line with CompuServe® for forums, Executive News and e-mail.

Even send and receive mail to any-

On-line.

one on the Internet. Plug in a pager card so your

office or your kids can contact you. And, with an optional fax/modem,

Page.

it's never been simpler to send documents or files over phone or cellular networks. With Zaurus, you're not alone out there.

Anywhere.

CONNECTIVITY

Of all the business connections you have, the one with your computer may be the most important. Zaurus works with any computer you work with.

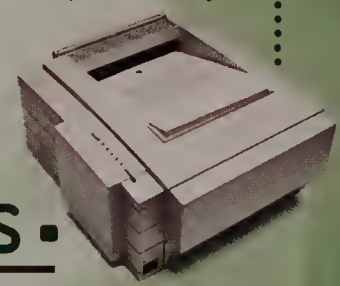
Exchange

Connect easily to your desktop, notebook or other peripherals by cable or infrared. Download your Microsoft® Excel, Word and Schedule+ files from your computer to your Zaurus for the important data you need on the road. With one button, *Clipboard Link* lets you beam information from your Zaurus to a PC just like your TV remote control. What's more, with *Remote Access* you can "grab" information off your personal computer from anywhere, anytime you need it. Now you really can take it with you.

spreadsheets

contacts

documents.



your.global.technology.server

this is where the new generation of technology gets personal>>>and you'll see how IT all works for you

it's the world's biggest show of Internet technologies, Windows® 95 and Windows NT™ advances, corporate networking, multimedia, UNIX, and everything else that is changing the way you do business>>>find your customized applications from 1000 exhibitors, tens of thousands of products, and over 100 conference sessions>>>hear keynotes from Netscape CEO Jim Clark and Microsoft® Group Vice President Paul Maritz >>>and see winning technologies at the WINDOWS WORLD Open, *NewMedia* INVISION Awards and *BYTE* Best of Show Awards

COMDEX®
Spring '96

WINDOWS WORLD '96

June 3–6, 1996
McCormick Place
Chicago, Illinois USA

Call the CONFERENCE HOTLINE at 617-433-1650 to register for conference or to find out more about sessions and speakers.

To register by fax call 617-449-5554, enter code 1, and have your fax number ready — we'll fax your registration form within 24 hours!

>>>go to the hottest site on the Web and enter code 1 to register for the exhibits and conference or for complete event information>>>

http://www.comdex.com

©1996 SOFTBANK COMDEX Inc. • 300 First Avenue, Needham, MA 02194-2722 USA • 617-433-1500 • WINDOWS WORLD and Windows NT are trademarks and Microsoft, Windows and the Windows logo are registered trademarks of Microsoft Corporation. WINDOWS WORLD and the Windows logo are used by SOFTBANK COMDEX under license from Microsoft. SP0770 2/96

TOP 20 PCs

Best of the Brands

New Packard Bell systems still don'

By Bryan Hastings and Harry McCracken

Once again, Dell dominates the top Best Buy selections: left, Dell Dimension XPS P133c; center front, WinBook XP5 P120; center back, Dell Latitude LX 4100D; right, Dell Dimension XPS P100c.

ake the cut, while Dell and Micron PCs continue to top the desktop charts.

Packard Bell sells more PCs than almost any other computer company. Walk into a major electronics or computer store—Circuit City, CompUSA, OfficeMax—and you'll see an inviting array of inexpensive PCs from this retail giant. So why doesn't Packard Bell show up on our Top 20s? Two reasons, neither immediately apparent to shoppers looking for a bargain: poor performance and bad service.

Because of these shortcomings, Packard Bell has consistently earned poor ratings for systems that we've reviewed, and the company declined to send us review units for almost a year. The dry spell ended this month when we received two new high-end minitowers: the $2998 Platinum Pro Pentium-150, and the $3298 Platinum Pro Pentium-166. Like all Packard Bell computers, these new machines look like great deals on the surface. Both of them came configured with 24MB of RAM, a vast 2GB hard disk, a 6X CD-ROM drive, a 28.8-kbps fax-modem, and enough bundled software to stock a small store. Even with drab graphics components (a 15-inch monitor and 1MB graphics adapter), these units initially look like a lot of computer for the money.

MARC SIMON

THE TOP 20
PC WORLD

Power pg. 166
Budget pg. 176
Notebooks pg. 184

But they're not. Closer examination reveals the same flaws that have plagued Packard Bell PCs for years. For starters, the Platinum Pros run much slower than their CPUs suggest. Even with all that RAM, the P-166 performs like a typical P-120. Packard Bell's other serious problem is the poor service score it continues to get from our readers. No other major company whose PCs we've tested approaches the same ratio of complaints. Until this message gets through to the consumers who are still buying Packard Bells, the company will have little incentive to change. So the next time you're in the market for a new PC, don't let low prices and inviting store displays fool you. When it comes to Packard Bell, just say no.

The Price Is Right

We get lots of letters from readers who think they've spied a pricing mistake in our Top 20 charts. Our price is different from the one they see listed in a company's ad or the one they hear from its salespeople. Usually the Top 20 price is higher—sometimes by a lot. What's going on?

Typically, one of a couple of factors explains the discrepancy. When an ad quotes a lower price than a review for an apparently identical model, look at the fine print. The configuration is probably different. Many companies like to advertise basic, low-cost machines with small hard drives and only 8MB of RAM. In contrast, the machines we test are generally better equipped. They have bigger hard disks, larger monitors, and other upgraded components. When vendors tell us these configurations typically sell the best, we have no reason to doubt them. A 540MB hard drive, for instance, is too cramped for most people these days, and 16MB of RAM is fast becoming a popular standard because it makes Windows 95 run faster.

And if you get a lower price when you call a sales line? Probably a price cut went into effect after we went to press. To help eliminate this problem, we're now collecting and verifying prices at the last possible moment. But even skating close to the edge of our deadlines can't ensure perfect numbers every time. There'll always be that last-minute cut, too late to print. But then, those ever-plunging prices are one of the nicest things about shopping for a PC today, aren't they?

PCs of a Feather

We're making an important change to the Top 20 charts this month. From this issue on, each chart will include only the highest-rated PC in any given model line. Why the change? PCs in the same series, such as Dell Dimensions, Micron Millennias, and HP Vectras, are often identical in many respects and earn similar overall ratings. It makes more sense for us to showcase just the best value rather than list every CPU in the line. When a vendor offers substantially different products, however, we'll continue to address them separately. That's the case this month, for example, with the Micron Millennia and Millennia Plus models on our Power Desktops chart. Similarly, five Toshiba portables appear on our notebook charts, but each has unique characteristics and is aimed at a particular type of user.

Our new ranking scheme affects this month's lineups more than price cuts and new PCs do. On the Power Desktops list, ranking only the best units from the Dell Dimension and Micron Millennia lines allows several new PCs onto the chart. Many of these new machines are P-166s from smaller companies. All of them look good, perform well, and have great prices. But a number of the smaller vendors can't demonstrate a track record for service or reliability, as we have little or no reader feedback on them. So consider the whole package carefully before you spend your money.

The overall charts changed more than our Best Buys did. Dell and Micron desktops still take the lion's share of honors, and the the top notebook vendors are all familiar names. Dell's Dimension XPS P133c and Micron's P133 Millennia are still the best high-end desktop values. Care for something faster or less expensive in those lines? Check out the Dimension and Millennia reviews for information on other good buys.

On our Budget Desktops chart, Dell's Dimension XPS P100c—now priced with a 15-inch monitor—replaces the Dell Dimension P75t and becomes our new number one Best Buy. It's followed by the same Vektron and DTK P-100s that claimed Best Buys last month. A Tempest Micro P-100 moves up to fourth, followed by the Gateway 2000 P-75 that was fourth in May. The HiQ Saturn Station, our first budget P-166 machine, debuts in 14th place. The model we tested performed fairly well and sells for an amazing $2215, but we haven't had enough reader feedback on HiQ's reliability and service to give a fair indication of what to expect.

Dell's Latitude LX 4100D is still our top budget notebook. But the discovery of a pricing error by Toshiba caused a shake-up in the power ranks. The company had been underpricing its Satellite Pro 400CDT by $459—the difference between the 16MB on our review unit and the base model's 8MB. With the correction, the WinBook XP5 P120 moved to the top. The rest of the notebook charts are jumping with new portables. Bargain hunters should pay special attention to Toshiba's new Satellite 100CS, an economy model that's fairly fast and sells for under $2000.

Bryan Hastings and Harry McCracken are senior associate editors for PC World. *They can be reached on PC World Online (see page 14 for contact information). Senior Associate Editor Rex Farrance and freelance writer Geoffrey Coffey contributed to this article. Testing by Dave Casini, Ulrike Diehlmann, Andrew Hawn, Jeff Kuta, and Mike Salayko; research and support by Julian Weatherby.*

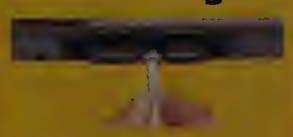
For more information about all products in this article, circle reader service no. 908.

Introducing SimpleJack™

The opening you've been waiting for.

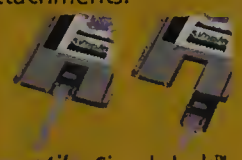
Presenting the world's first integrated in-line, direct-connect PC Card phone jack.

The SimpleJack™ Advantage



Simple to use. Flip open SimpleJack™ and plug in a standard telephone line. That's all. No more interface cables to fuss with or lose.

Horizontal connection. With SimpleJack™, phone cords are kept safely flat on the table, away from your hands and other hardware attachments.



Versatile. SimpleJack™ can be shifted to the PC Card's external port to make room for a second PC Card. Then it can be inserted back into the card for travel.

It may look small.

But the fact is, our new SimpleJack is the biggest thing to hit portable communications since, well, the Pony Express.

Because now connecting your portable to a phone line is as fast and easy as popping open SimpleJack and plugging in a standard RJ-11 phone cord.

SimpleJack accepts phone cords directly, without awkward proprietary interface cables. And SimpleJack's unique horizontal position keeps phone cords safely flat on the table.

You can open and close SimpleJack inside your portable's stacked Type II PCMCIA slot. Or, SimpleJack can be shifted to the card's external port to make room for a second PC Card.

SimpleJack is just one of the many advanced features you'll find in our 28.8 Communicator. Powerful MNP10-EC and TX-CEL cellular error control and avoidance technology makes calling over a cellphone more reliable.

Voice mail capabilities allow you to automatically record incoming calls.

And versatile communications software for Windows® 3.1 and 95 make it easy to send and receive faxes, data and access the Internet.

To find out more about SimpleJack, call us today at 1-800-4-SIMPLE (1-800-474-6753).

Because in today's world, you need more than just the right technology.

You need the right connections.

28.8 Communicator with SimpleJack™

- Direct in-line RJ-11 phone connector
- 28,800 bps V.34 data
- 14,400 bps fax
- Cellular ready
- MNP10-EC cellular error correction
- TX-CEL cellular error avoidance
- Digital line guard
- Complete voice mail capabilities on systems with integrated sound
- Ultrasonically welded steel case
- Windows® 3.1 and 95 compatible communications software
- Five year warranty

Use a direct-connect cable to plug a cell phone directly into the 28.8 Communicator with SimpleJack.

Simple Technology offers a complete line of plug n' play communication, networking and memory PC Cards for today's mobile professionals.

1-800-4-SIMPLE
4 7 4 6 7 5 3

http://www.simpletech.com

Simple® TECHNOLOGY

Circle 199 on reader service card

*Patent-pending

For instant product information call our fax-on-demand: 1-800-429-5626 x500

THE PC WORLD TOP 20

POWER DESKTOPS

1 **Dell Dimension XPS P133c**
Well priced, has it all.

	Last month	Months on chart	Last reviewed	Overall rating[1]	PC WorldBench score	Reliability/ service rating	Price	CPU	RAM (MB)	Hard drive (MB)
1 Dell Dimension XPS P133c	1	8	Mar 96	92	193	75/76	$2829	Pentium-133	16	1080
2 Micron P133 Millennia	2	11	Mar 96	91	182	78/72	$2699	Pentium-133	16	1624
3 Micron P166 Millennia Plus	10	5	Mar 96	89	198	78/72	$4148	Pentium-166	16	2150
4 Dell OptiPlex GXMT 5133	5	3	Apr 96	89	184	75/78	$3355	Pentium-133	16	1624
5 NEC PowerMate P-133	14	5	Mar 96	87	185	72/74[3]	$2679	Pentium-133	16	1624
6 HP Vectra VL Series 4 5/166MT	11	2	May 96	85	197	82/69[3]	$3915	Pentium-166	16	1624
7 Digital Celebris GL 5166ST	–	1	current	84	198	80/74[3]	$3999	Pentium-166	16	1280
8 Compaq ProLinea 5100	20	4	Mar 96	82	161	77/74	$2864	Pentium-100	16	1080
9 Austin PowerPlus 133	24	1	current	82	178	67[3]/[3]	$2599	Pentium-133	16	1275
10 Compaq Deskpro XL 5133	18	4	Mar 96	82	173	77/74	$4499	Pentium-133	16	1080
11 Gateway 2000 P5-133	19	4	Mar 96	81	186	68/72	$2598	Pentium-133	16	1624
12 Compaq Deskpro 5133	23	2	Mar 96	80	161	77/74	$4129	Pentium-133	16	1080
13 DTK Quin 54M/P133	27	1	Mar 96	79	152	73[3]/[3]	$2499	Pentium-133	16	1080
14 Polywell Poly 5166P8	31	1	May 96	79	201	[3]	$2695	Pentium-166	16	1080
15 Gateway 2000 P5-133XL	35	1	current	79	172	68/72	$2969	Pentium-133	16	1624
16 Tangent MediaStar 5166/95	32	1	current	79	200	[3]	$2875	Pentium-166	16	1080
17 PerComp Professional P150	28	2	Mar 96	78	187	[3]	$2799	Pentium-150	16	1624
18 Swan PowerHouse P-166	–	1	current	78	196	66[3]/[3]	$2549	Pentium-166	16	1624
19 Netis N166 Home Office	38	1	May 96	78	191	[3]	$2648	Pentium-166	16	1624
20 Acma zPower 133	40	1	current	77	184	[3]	$3095	Pentium-133	16	1080

BEST BUY

[1] Percent contribution to overall rating: PC WorldBench score (25); reliability (25); features (20); price (15); service and support (15).
[2] To order fax copies of system reviews, call 800/434-4495 from a touch-tone phone and use your credit card. You can order next month's reviews in advance: Budget Desktop, Power Desktop, or Notebook PCs Top 20 charts and capsule reviews ($9.95, available May 27). You can also order a previous month's Top 20 chart with capsule reviews plus Features Comparison and Test Report ($4.50) and individual capsule reviews with Feature Comparison and Test Report ($1.50 each). Prices effective for the U.S. and Canada. Foreign orders are $15 for advance Top 20s, $8 for previous months' Top 20s, and $4 for individual reviews.

2 **Micron P133 Millennia**
Fine features, near-budget price.

3 **Micron P166 Millennia Plus**
Loaded with SCSI storage.

4 **Dell OptiPlex GXMT 5133**
Solid corporate PC.

5 **NEC PowerMate P-133**
Great features for the money.

CD-ROM drive	Bus slots	Monitor size/ dot pitch	Vendor contact number	Fax reprint number [2]	Reader service no.	Comments (Recommended as home system)
6X	ISA, PCI	17"/.28	800/613-3355	3299	713	Now $200 cheaper, this loaded PC is fast; P-120 and P-166 versions are also good values.
6X	ISA, PCI	15"/.28	800/223-6571	3268	714	Well-designed line also includes fine P-100, P-120, P-150, and P-166 versions.
6X	ISA, PCI	15"/.28	800/223-6571	3331	715	Fast SCSI PC with added 1GB Iomega Jaz drive dropped $498 in price to join Best Buys.
4X	ISA, PCI	17"/.28	800/613-3355	3339	716	Quick corporate PC with built-in connectivity; for $200 more, get the superfast P-166 version.
6X	ISA, PCI	15"/.28	800/632-4636	3330	717	Fast, big hard drive, temptingly priced. P-166 version is also good, though slow for its CPU.
4X	ISA, PCI	15"/.28	800/752-0900	3362	718	Beautifully built, reliable corporate PC; HP's service rating has dipped. P-133 costs $300 less.
4X	ISA, PCI	15"/.28	800/344-4825	3338	719	Despite the high price, fast performance and high reliability rating make this PC a good value.
—	ISA, PCI	17"/.28	800/345-1518	3341	720	Costly P-100 lacks CD-ROM drive, but has a big monitor, excellent reliability and service.
6X	ISA, PCI	15"/.28	800/752-1577	3370	721	Excellent price on fully equipped minitower, but reliability rating is just average.
4X	EISA, PCI	15"/.28	800/345-1518	3340	722	Compaq instills confidence, but you pay a bundle for built-in SCSI, LAN features, EISA slots.
6X	ISA, PCI	17"/.26	800/846-2000	3346	723	Solid array of components makes this PC attractive, though reliability lags behind the leaders.
4X	ISA, PCI	17"/.28	800/345-1518	3344	724	Fairly slow but less expensive than network-oriented model at no. 10.
6X	ISA, PCI	15"/.28	800/289-2385	3371	725	Good price, but slowest PC on the chart; fast CD-ROM drive is its most outstanding feature.
4X	ISA, PCI	15"/.28	800/999-1278	3372	726	Impressively low price on ultrafast PC, but we can't gauge reliability and service.
6X	ISA, PCI	17"/.26	800/846-2000	3373	727	Top-notch graphics subsystem and 6X CD-ROM drive, but so-so performance for a P-133.
4X	ISA, PCI	17"/.28	800/342-9388	3374	728	Fine price on fast, well-equipped PC with big monitor; not enough data to rate reliability, service.
6X	ISA, PCI	17"/.26	800/856-6688	3375	729	Low-cost PC is fast and loaded, has a big monitor; scant data on service, reliability.
6X	ISA, PCI	15"/.28	800/554-6748	3376	730	Fast, great price, speedy CD-ROM drive; no sound; limited data says reliability is average.
4X	ISA, PCI	15"/.28	800/577-7526	3377	731	Bargain for home-business use; not enough reader feedback to rate reliability and service.
6X	ISA, PCI	17"/.28	800/786-6888	3378	732	Great graphics and multimedia, but we lack data to rate reliability and service.

[3] Fewer than 100 Reliability and Service Monitor responses. Rating is based on responses for this company and the average of responses for all companies. No score is shown if we received fewer than 20 reliability or service responses.

For more information about all products in this table, circle reader service no. 909.

Top 20 Power Desktops

TWO NEW PCs WE TESTED THIS MONTH FARED well enough to claim places on the Power Desktops chart. Our number 7 system is Digital's GL 5166ST, a revised version of the Celebris we reviewed in March. At $3999, this Pentium-166 is no bargain, but according to our readers, Digital's PCs are highly reliable. By contrast Swan's $2549 PowerHouse P-166 has an unusually low price and fine P-166 performance. However, we have just a slim file of feedback on Swan reliability and not enough information to rate the company's service. So the new Swan enters the chart—but only at number 18.

Other than these two new arrivals, the major source of changes on the power desktops chart is our new policy of listing only the top-rated configuration among substantially similar models. Although that approach reduces the number of Dell Dimension and Micron Millennia systems on the chart, the Pentium-133 versions of these two lines still retain the top two spots. Other Dimensions and Millennias that have done well in our tests remain strong choices within their processor class; check the top two systems' capsule reviews for more information on those PCs.

Dell Dimension XPS P133c

LAST REVIEWED: March 1996

PROS: 512K secondary cache; 28.8-kbps fax-modem; great service, reliability; 6X CD-ROM drive

CONS: On/off button too close to the floppy eject

Our number one power desktop in May, this Pentium-133 system is now $200 cheaper. It's very fast for a P-133 PC, and $2829 is a great price for a minitower with 16MB of EDO RAM, a 1080MB hard drive, a 17-inch monitor, a 28.8-kbps fax-modem, a 6X CD-ROM drive, and sound. Dell backs this PC up with a warranty that covers parts for three years and labor for one—and Dell service and reliability are outstanding. To improve the value, Dell is now bundling Microsoft Office 95. We also reviewed the P-120 model in our March issue, and it has ranked well every month since then. However, the price difference between identically configured P-120 and P-133 Dimensions was just $30 at press time, and the P-133 is significantly faster. If you want more speed, check out the $3842 Pentium-166 Dimension XPS 166c, an updated version of a model we've tested previously. It too is a fine system overall, though its compact case provides limited room for expansion.

Micron P133 Millennia

LAST REVIEWED: March 1996

PROS: Well built, 1624MB hard drive, full multimedia, strong warranty, 6X CD-ROM drive

CONS: Some similarly priced systems have larger monitors

Micron's $2699 P-133 PC stands out for its prime mix of sheer processing speed, multimedia configuration, solid warranty, and high reliability score. But the smaller monitor and lack of a modem place this system behind the top-rated Dell. This P-133 Millennia hits the sweet spot of power and price right now, but a number of other similarly equipped Millennias have excelled in our tests in the past, including models configured with P-100, P-120, P-150, and P-166 processors. The P-166 version we tested in April shows a healthy performance edge over the P-133, although its speed is average for its CPU class. Any of these Millennias is worthy of the Top 20, although the P-100, P-120, and P-150 can't equal the price/performance value of the 133- and 166-MHz models.

Micron P166 Millennia Plus

LAST REVIEWED: March 1996

PROS: 2.1GB SCSI hard drive, 1GB removable storage drive, 6X CD-ROM drive

CONS: Some similarly priced systems have larger monitors

A price drop of $498 propels this quick, deluxe Millennia model into our Best Buy ranks. Its $4148 price is still high, but it buys you a P-166 with a huge 2.1GB SCSI hard drive, a 6X CD-ROM drive, sound, and a 1GB Iomega Jaz SCSI-2 removable cartridge drive that equals the performance of many fixed hard drives. If you need additional 1GB cartridges, they cost just $99 each. We only wish the monitor were bigger than 15 inches.

Dell OptiPlex GXMT 5133

LAST REVIEWED: April 1996

PROS: LAN ready, multimedia, 17-inch monitor, full three-year warranty on parts and labor

CONS: Pricey for a Pentium-133

For network or stand-alone use, this Dell Pentium-133 is a strong performer. For $3355, you get a roomy 1624MB hard drive, a 4X NEC CD-ROM drive, a sound card and speakers, and a good-quality 17-inch monitor. If you like the GXMT 5133's style but want more muscle, consider the OptiPlex GXMT 5166 (reviewed in May). You'll pay more for its Pentium-166 CPU and 32MB of RAM, but it's among the fastest PCs we've tested.

NEC PowerMate P-133

LAST REVIEWED: March 1996

PROS: Good performance, 6X SCSI CD-ROM drive, big 1624MB hard drive

CONS: Some cable clutter inside case

At $2679, this fast P-133 gives the top systems a run for their money, with 16MB of EDO RAM, a 1624MB hard drive, and a 6X

The New Casio Digital Camera.
Pretty amazing...no matter how you look at it.

The new Casio QV-10A *plus* Digital Camera might just change the way you take and display your pictures. Because until now, digital cameras were bulky and expensive. The QV-10A *plus* is anything but.

Using it is simple. With its LCD screen you see your pictures instantly. With the touch of a button you can delete images you don't want or display one, four or nine shots at a time in the camera or on a TV. It can even send images from the computer back to the camera, so it's perfect for presentations.

And with the QV software, you can easily add photos to documents and e-mail. Plus with the Adobe PhotoDeluxe™ software that's included, you can even customize your photos. Now it doesn't take a PhD to use a digital camera. All it takes is the Casio QV-10A *plus*.

And that's just the beginning.

96 Digital Pictures. LCD Color Display. Instant Viewing.

Adobe PhotoDeluxe

PopularScience BEST OF WHAT'S NEW 1995 AWARDS

Visit us at http://www.casio-usa.com

CASIO®

capture. create. communicate.

Circle 65 on reader service card

Adobe PhotoDeluxe is a trademark of Adobe Systems, Inc.

CD-ROM drive. The graphics setup is also good, with 2MB of DRAM on an S3 Trio64–based video card, and NEC's excellent MultiSync XE 15 monitor. NEC's similar Pentium-166 PowerMate (reviewed in May) costs about $700 more and also scored well overall, though its speed is below average for a P-166.

6 HP Vectra VL Series 4 5/166MT

LAST REVIEWED: May 1996

PROS: Solid performance, great graphics card, 1624MB hard drive, top-rated reliability

CONS: Steep price, no speakers for multimedia, 15-inch monitor, no toll-free tech support

Hewlett-Packard's sturdy Pentium-166 minitower turned in midrange PC WorldBench scores. For $3915 you get HP's top corporate offering, with 16MB of EDO RAM, a 1624MB hard drive, a 15-inch monitor, a quad-speed CD-ROM drive, and a sound card, plus a three-year warranty and HP's outstanding reliability. Service is generally good, although Vectra models do not include toll-free tech support. Another worthy Vectra: The VL Series 4 5/133 (reviewed in March) is a fast P-133 with a 1080MB hard drive and a 17-inch monitor. The price? About $300 less than the P-166.

7 Digital Celebris GL 5166ST

NEW THIS MONTH

PROS: Great service and reliability policies; integrated sound, video, and ethernet

CONS: Pricey, 15-inch monitor, spotty system manual

If system reliability is paramount, put Digital on your shortlist. According to our readers, only Hewlett-Packard PCs have a better record for trouble-free operation. In fact, Digital's superb reliability propels the Celebris GL 5166ST onto our Top 20 chart. Corporate buyers will like the built-in ethernet connection. (This model has a somewhat different configuration from the GL 5166 unit we tested in March; the secondary cache is larger, and it lacks a SCSI adapter.)

Digital

Digital isn't known for cut-rate pricing, and this Celebris's $3999 cost is relatively high. While the Celebris GL 5166ST's performance is on a par with that of most other Pentium-166 machines we've seen, its configuration is fairly mainstream: The 16MB of EDO RAM, 1280MB hard drive, and 16-bit sound card really amount to only the basics you expect in a power system. Furthermore, this PC comes with a 4X CD-ROM drive and 15-inch monitor at a time when 6X drives and 17-inch displays are becoming common on top-end desktops. This minitower is well integrated—the sound controller and graphics and ethernet adapters are all built in. But it's not very expandable, with only two free ISA slots augmented by two slots that are open for either an ISA or a PCI card. In other respects, the interior shows a thoughtful, easy-to-upgrade design, and cable clutter is minimal.

Digital does include some nice extras, such as the integrated 64-bit Matrox chip with 2MB of WRAM—a powerful graphics processor that offers 3-D acceleration. Other bonuses include 512K of pipeline-burst cache, a well-built keyboard, and a microphone. The company bundles a useful collection of multimedia applications: Adobe Acrobat for viewing electronic documents, the Audio Rack 32 sound editor, Apple's QuickTime video player, and a few video and animation clips that Digital throws in to demonstrate the system's capabilities.

Digital's service and reliability receive high marks from our readers. Celebris models come with a three-year warranty for parts and labor and a year of free on-site service. And Digital promises next-business-day on-site response, although there's no established turnaround policy for factory repairs. The company offers round-the-clock tech support, but it's available free just for the first 90 days. This approach may not bother big corporate clients with in-house support, but it could be a major irritant to home-office buyers.

In the final analysis, you can find faster and better-outfitted machines for a lot less. Still, this Digital is a solid contender if you're looking for a network-ready PC with terrific reliability.

8 Compaq ProLinea 5100

LAST REVIEWED: March 1996

PROS: Well built; large high-quality monitor, outstanding reliability and service

CONS: Sluggish and expensive for a P-100, no CD-ROM drive

9 Austin PowerPlus 133

NEW THIS MONTH

PROS: 6X CD-ROM drive, 24-hour technical support

CONS: Mediocre reliability score

This $2599 minitower—which we tested for our March issue—has all the basics for a home office. It's not a standout in any one area and wasn't among the Top 20 until this month, when we made room by consolidating multiple model entries. You get 16MB of RAM, 256K of secondary cache, a 1275MB hard drive, a 6X CD-ROM drive, sound and speakers, a fast 28.8-kbps fax-modem, but just a 15-inch monitor. It's a solid P-133 performer, and IPC, the vendor of Austin PCs, provides a three-year warranty. The company's reliability rating could be better, however.

10 Compaq Deskpro XL 5133

LAST REVIEWED: March 1996

PROS: SCSI hard drive, integrated ethernet adapter, full multimedia, great reliability and service

CONS: Most expensive PC on the chart

11 Gateway 2000 P5-133

LAST REVIEWED: March 1996

PROS: Attractive price, good performance, roomy 1624MB hard drive

CONS: Reliability score from our fax-back survey could be better

12 Compaq Deskpro 5133

LAST REVIEWED: March 1996

PROS: Highly expandable, 17-inch monitor, three-year warranty

CONS: Expensive, no sound card or fax-modem

KEEP IN STEP

with your desktop performance needs – now, for the future.

In order for your notebook to keep in step with no compromise desktop performance, you need the Everex STEP Note Plus. The STEP Note Plus comes packed with features equal or better than any desktop PC:

No compromise performance
Up to 133MHz Pentium processor
Up to 40 MB RAM
256KB synchronous L2 cache

Clear, fast graphics
Huge 11.3" or 10.4" DSTN or TFT display
800 x 600 x 256 colors SVGA resolution on 11.3"display
Accelerated PCI graphics

Modularity for customized tasks
Removable floppy drive provides:
4X CD ROM capability
Support for second battery

Removable Hard Drive
Up to 1.3GB

Multimedia Subsystem Keeps *You* in Step
16-bit stereo sound
Built-in stereo speakers
Built-in microphone

Room to Grow
Full PCMCIA support
Docking station support (shown in screen)
Port Replicator support

Keep the Beat
2 year limited warranty[1]
48 hour Hot Swap for first year

All at an affordable price

EVEREX

http://www.everex.com
Tech Support: **1-800-262-3312,**
24 hours a day, 7 days a week

1-800-EVEREX1

Circle 107 on reader service card

intel inside pentium® PROCESSOR

STEPNote HotSwap

Designed for Microsoft Windows 95

energy EPA POLLUTION PREVENTER

The Intel Inside logo and Pentium are registered trademarks and the Pentium Processor logo is a trademark of Intel Corporation. Microsoft, Windows and the Windows logo are registered trademarks of Microsoft Corporation. The EnergyStar emblem does not represent EPA endorsement of any product or service. [1]One year on battery and LCD. Battery rated as percentage used after first 90 days.

13 DTK Quin 54M/P133

LAST REVIEWED: March 1996

PROS: Tons of slots and bays, 6X CD-ROM drive

CONS: Slow for a power system, no weekend telephone support

14 Polywell Poly 5166P8

LAST REVIEWED: May 1996

PROS: Good P-166 performance, $400 price drop, five-year labor warranty

CONS: Some cable clutter

15 Gateway 2000 P5-133XL

NEW THIS MONTH

PROS: 6X CD-ROM drive, 1624MB hard drive, great graphics card and 17-inch monitor

CONS: Performance a little below average for a P-133

Gateway 2000's deluxe model P-133 was originally tested for our March issue, although it didn't make the Top 20 until this month. At the system level, this $2969 PC is a near twin to its less-expensive P5-133 sibling, although this model has a tower instead of a compact case, a 17-inch Gateway Vivitron monitor, and sound and speakers. Like its stablemate, it has 16MB of RAM and a 1624MB hard drive. A big difference is the Matrox graphics card with 2MB of WRAM. The warranty covers parts for three years and labor for one, but our fax-back data rates reliability as just average.

16 Tangent MediaStar 5166/95

NEW THIS MONTH

PROS: Full multimedia, 17-inch monitor, three-year warranty

CONS: Some cable clutter

For $2875, this rapid Pentium-166 delivers nearly all the basics for a home-office system (there's no fax-modem at this price). The MediaStar 5166/95 comes with 16MB of RAM, a 1080MB hard drive, 512K of secondary cache, a 4X CD-ROM drive, sound, and a 17-inch monitor with integrated speakers. We first tested this MediaStar for our March issue; now a price cut of more than $300 moves it onto our Top 20. We don't have enough fax-back responses from Tangent customers to rate the company's reliability and service, as is the case with a number of smaller vendors.

17 PerComp Professional P150

LAST REVIEWED: March 1996

PROS: Solid performance, 6X CD-ROM drive, 1624MB hard drive

CONS: Not enough fax-back response from readers to rate reliability and service

18 Swan PowerHouse P-166

NEW THIS MONTH

PROS: Great price for decent P-166 desktop; friendly documentation, 6X CD-ROM drive

CONS: No sound card, blocked SIMM sockets, one-year warranty

Prices are starting to drop at the high end, but Swan's $2549 PowerHouse Pentium-166 is one of the first truly bargain-priced P-166 systems we've seen. In fact, it sells for hundreds of dollars less than most of its competitors. Swan cut a few corners to get the price so low, but this no-frills minitower is still a good value for power seekers with tight budgets.

The PowerHouse performs well, turning in typical PC WorldBench marks for current P-166 desktops. You get 16MB of RAM, 256K of pipeline-burst cache, an ample 1624MB hard drive, and a 6X CD-ROM drive. However, the graphics subsystem is decidedly on the anemic side: The standard STB PowerGraph 64 graphics card has just 1MB of DRAM, and it's matched up with a 15-inch monitor. In short, don't expect much in the way of graphics performance beyond 800 by 600 resolution. There's no sound card or modem, either, and the standard keyboard and mouse feel flimsy.

Swan PowerHouse

You'll find respectable room for expansion inside the PowerHouse's midsize tower case: Three externally accessible drive bays and three internal bays are free, as are two ISA slots, one ISA or PCI slot, and two PCI slots. One drawback: The location of the hard drive and its cables make the SIMM sockets somewhat difficult to access. Swan's system manual is better than most, but the service policies are somewhat thin. The price of this system gets you only a one-year warranty, and technical support is limited to just 9 hours a day weekdays and Saturdays. The company does include a year of on-site service, and fax-back, BBS, and World Wide Web support are also available. Swan is a veteran PC marketer, so it's surprising that we don't have enough data to rate service satisfaction. Limited reader response indicates about average system reliability, however.

19 Netis N166 Home Office

LAST REVIEWED: May 1996

PROS: Good-quality wavetable sound card, $202 price drop

CONS: Not enough fax-back response to rate reliability or service

20 Acma zPower 133

NEW THIS MONTH

PROS: Lavish graphics subsystem, high-quality multimedia components

CONS: Warranty covers labor for first year only, limited phone support hours

You can find plenty of Pentium-133 PCs with 16MB of RAM and a 1080MB hard drive for a lot less than $3095. But the Acma zPower is still a reasonable deal, considering that its generous configuration includes an expensive graphics adapter with 4MB of VRAM, a 17-inch monitor, a 28.8-kbps modem, a 6X CD-ROM drive, sound, and Altec Lansing speakers. Performance is good for a Pentium-133 system. The warranty included in the price covers parts for three years and labor for one. We haven't heard from enough Acma customers to reach any conclusions about the company's service or reliability. The Acma zPower 133 was first tested for our March issue but didn't make the chart until this month.

WANT A 486 UPGRADE THAT OUTPERFORMS INTEL? FOR $139 YOU CAN PUT KINGSTON INSIDE.

Making your 486 run like a Pentium® doesn't take magic. It just takes a TurboChip™ and a little pocket change. Instantly, you will have 5 × 86 clock-quadrupled technology that will help your system run three times faster. And the TurboChip has all the power you need to run today's demanding software, whether you have a 486-based DX2, DX, SX2, or SX system. So how does the TurboChip compare to Intel's OverDrive®? Not only does the TurboChip beat the OverDrive in price, compatibility, and warranty, but in a recent study* it also outperformed it. The TurboChip is designed with AMD's Am 5 × 86–P75 CPU and upgrades with most IBM-compatible desktop systems. And since the TurboChip is a chip-for-chip replacement upgrade, it's easy to install. Plus it preserves your system configuration. To try out a TurboChip today, just call our toll-free number.

Kingston® TECHNOLOGY CORPORATION

For more information call us at (800) 558-5517 ISO 9001 SGS *Visit our Web site: http://www.kingston.com/pcw.htm*

CPU by AMD Am5x86-P75

*Wintach test, Advanced Micro Devices, 1995. Kingston Technology Corporation, 17600 Newhope Street, Fountain Valley, CA 92708 USA, (714) 435-2600, Fax (714) 435-2699. © 1996 Kingston Technology Corporation. All rights reserved. Kingston is a registered trademark and Computing Without Limits and TurboChip are trademarks of Kingston Technology Corporation. All other registered trademarks are the property of their owners.

Circle 128 on reader service card

Only one database easier without making

makes your life
t absolute dreck first.

FILEMAKER PRO 3.0. THE ONLY DATABASE DESIGNED FOR BUSY BUSINESS PEOPLE, NOT GEARHEADS.

FILEMAKER PRO WOWS CRITICS, WINS HEARTS.

t (FileMaker Pro 3.0) is easier than ever to use.... f you're relatively new to databases, demand ease of se in creating and working with databases, and need ampatibility between Windows and Mac users, ileMaker is an excellent choice."

– WINDOWS SOURCES, 2/96

st relational databases are designed for large porations that employ an army of programmers and ministrators. In the small office world, who has the r the resources? The answer to that would have FileMaker Pro 3.0."

– HOME OFFICE COMPUTING, 2/96

FileMaker Pro 3.0 is one of the few end-user databases hat actually lives up to its claims of simplicity."

– PC COMPUTING, 4/96

Business is booming and you could use a database. But the thought of putting your business on hold while you figure one out doesn't exactly thrill you. That's why there's FileMaker® Pro 3.0 for Windows. FileMaker Pro is specifically designed to be easier to use than typical Windows databases. Just open up the box and start running your business like a well-oiled machine.

FileMaker Pro 3.0 has all the features you could ever need. It has a complete set of database templates to get you started, powerful mail merge capabilities, new word processing improvements, and automatic phone dialing. Its ScriptMaker® feature lets you automate routine task and menu commands, helping you be even more efficient. Because it's relational, a change in one database will automatically be reflected wherever you use the information, saving you loads of time and hassle. Its built-in networking support allows many users to share a database simultaneously even over the Internet. And last but not least, FileMaker Pro is specially designed to take advantage of the latest technology in Windows 95, but also runs on Windows 3.1 and Windows NT.

Designed for Microsoft Windows 95

Mac OS

If you want a database that helps sort out your business without putting you out of sorts, your decision is clear: FileMaker Pro 3.0.

For more information about FileMaker Pro 3.0, visit your nearest reseller, call Claris at 1-800-293-0617 ext. 1156, or visit us on the Web at http://www.claris.com.

CLARIS®

Simply powerful software.™

In Canada, please call 1-800-361-6075 ext. C148

Claris Corporation. All rights reserved. Claris, FileMaker, and ScriptMaker are registered trademarks and Powerful Software is a trademark of Claris Corporation in the U.S. and other countries. The Mac OS logo trademark of Apple Computer, Inc. Microsoft is a registered trademark and Windows and the Windows logo are trademarks of Microsoft Corporation. All other trademarks are property of their respective owners.

THE PC WORLD TOP 20

BUDGET DESKTOPS

1 **Dell Dimension XPS P100c**
Former power PC now budget no. 1.

	Last month	Months on chart	Last reviewed	Overall rating [1]	PC WorldBench score	Reliability/ service rating	Price	CPU	RAM (MB)	Hard drive (MB)
1 Dell Dimension XPS P100c	–	1	Mar 96	100	174	75/76	$2252	Pentium-100	16	1080
2 Vektron Multimedia P-100	2	6	Mar 96	95	171	[3]	$1695	Pentium-100	16	1080
3 DTK Quin 54M/P100	3	4	Mar 96	95	148	73 [3]/66 [3]	$2050	Pentium-100	16	1080
4 Tempest Pentium Giga Media P5-100	15	6	Mar 96	93	132	[3]	$1720	Pentium-100	16	1270
5 Gateway 2000 P5-75	4	7	Mar 96	93	98	68/70	$1609	Pentium-75	8	850
6 Dell OptiPlex GL+575	6	4	Mar 96	93	121	75/78	$2111	Pentium-75	16	540
7 Diamond DT-100	8	4	Mar 96	93	156	[3]	$1545	Pentium-100	16	1080
8 Quantex QP5/100 M-3	9	3	Mar 96	92	167	61/63	$1899	Pentium-100	16	1280
9 Digital Venturis 575	16	7	Mar 96	91	100	80/74 [3]	$2049	Pentium-75	8	850
10 CompuTrend Premio 5x86-100	12	5	Mar 96	91	126	[3]	$1599	Cx5x86-100	16	1080
11 Compaq ProLinea 575e	10	2	May 96	91	86	77/74	$1754	Pentium-75	8	630
12 Austin PowerPlus 75	18	4	Mar 96	91	127	67/70	$2099	Pentium-75	16	850
13 Netis N5100 Media	11	2	May 96	91	166	[3]	$2048	Pentium-100	16	1624
14 HiQ Saturn Station	–	1	current	90	190	[3]	$2215	Pentium-166	16	1624
15 Swan Pentium 75 Series	20	5	Mar 96	90	87	66 [3]/ [3]	$1699	Pentium-75	8	850
16 Micro Express MicroFlex-PCI/5133	19	3	Apr 96	89	190	59 [3]/ [3]	$2099	Pentium-133	16	1624
17 USA Flex Home/Office PT-120 Multimedia	33	1	current	89	124	63 [3]/ [3]	$1999	Pentium-120	8	1080
18 Polywell Poly 4120P8	21	6	Mar 96	89	73	[3]	$1595	AmDX4-120	8	1080
19 NMC Expert System	31	1	current	86	185	[3]	$2399	Pentium-133	16	850
20 Tangent MediaStar 5133/95	–	1	current	86	191	[3]	$2495	Pentium-133	16	1080

BEST BUY

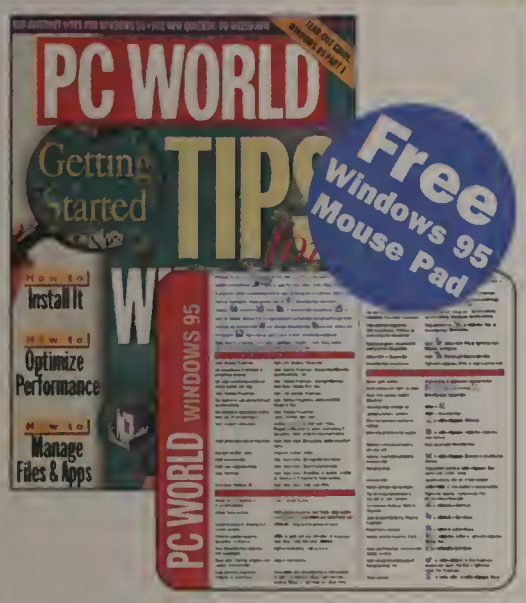
[1] Percent contribution to overall rating: price (25); reliability (25); features (20); PC WorldBench score (15); service and support (15).
[2] To order fax copies of system reviews, call 800/434-4495 from a touch-tone phone and use your credit card. You can order next month's reviews in advance: Budget Desktop, Power Desktop, or Notebook PCs Top 20 charts and capsule reviews ($9.95, available May 27). You can also order a previous month's Top 20 chart with capsule reviews plus Features Comparison and Test Report ($4.50) and individual capsule reviews with Feature Comparison and Test Report ($1.50 each). Prices effective for the U.S. and Canada. Foreign orders are $15 for advance Top 20s, $8 for previous months' Top 20s, and $4 for individual reviews.

63% OFF

PC WORLD

63% OFF

SAVINGS VOUCHER



☐ **Yes.** Send me PC WORLD! I'll pay just $21.97 for 12 monthly issues–63% off the annual newsstand rate, the equivalent of almost 7 free issues. Also, rush my free Windows 95 mouse pad!

NAME

COMPANY

ADDRESS

CITY / STATE / ZIP

- **Monthly Top 20 PC rankings**
- **In-Depth news and reviews**
- **Buyers Guides, How-Tos and MORE!**

Please allow 6-8 weeks for delivery of your first issue. Canadian orders please add $20 USD per subscription for postage plus 7% GST (#R124669680). All other countries send $65.97 USD to PC World, P.O. Box 55029, Boulder CO 80322-5029. Printed in the USA. Savings based on newsstand rate of $59.40.

4MH67

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Subscription Department
P.O. Box 51833
Boulder, Colorado 80323-1833

2 **Vektron Multimedia P-100**
Super price.

3 **DTK Quin 54M/P100**
Good balanced offering.

4 **Tempest Pentium Giga Media P5-100**
Loaded home-office PC.

5 **Gateway 2000 P5-75**
Lowest-priced Best Buy.

CD-ROM drive	Bus slots	Monitor size/ dot pitch	Vendor contact number	Fax reprint number[3]	Reader service no.	Comments (Recommended as home system)
6X	ISA, PCI	15"/.26	800/613-3355	3339	733	Switch to 15-inch monitor, resultant $447 drop make quick PC budget no. 1. Add $99 for sound.
4X	ISA, PCI	15"/.28	800/725-0026	3325	734	The price is a knockout, but we lack enough data to rate reliability and service.
6X	ISA, PCI	15"/.28	800/289-2385	3351	735	Fast CD-ROM drive and high-quality components—an excellent buy, but a tad slow for a P-100.
4X	ISA, PCI	15"/.28	800/818-5163	3356	736	Price on loaded PC is right, though it's a bit slow. We lack enough data to rate reliability.
6X	ISA, PCI	15"/.25	800/846-2000	3317	737	Low cost, well built. Sound is $99 extra. P5-120 and P5-100 Family PCs are also worthy values.
4X	ISA, PCI	15"/.25	800/613-3355	3354	738	Made for LAN use; nimble PC with small hard drive has Dell's best warranty. Add $99 for sound.
6X	ISA, PCI	14"/.28	800/989-7253	3555	739	Now $100 cheaper; small monitor, unrated reliability. DT Super 150 costs about $350 more.
4X	ISA, PCI	15"/.28	800/896-4898	3353	740	Multimedia PC comes with the works, but reliability and service scores aren't great.
4X	ISA, PCI	14"/.28	800/344-4825	3358	741	A little pricey; small monitor; makes the chart on strong reliability and service.
4X	ISA, PCI	15"/.28	800/677-6477	3323	742	Think of it as Pentium-75 performance at a 486 price; fully loaded but no weekend support.
—	ISA, PCI	15"/.28	800/345-1518	3366	743	Slowest P-75 on the chart, and not loaded—but inexpensive and well built.
4X	ISA, PCI	15"/.28	800/752-1577	3349	744	Quick minitower has full multimedia, 14.4-kbps modem, average reliability, good service.
4X	ISA, PCI	15"/.28	800/577-7526	3367	745	Fast; reliability unknown. P-133 N5133DPS and P-120 N5120 Media are similar values.
6X	ISA, PCI	15"/.28	800/827-5836	3379	746	Exceptionally low price for a multimedia P-166. We lack data to rate reliability and service.
4X	ISA, PCI	15"/.28	800/261-7926	3360	747	One of the slowest P-75s we've tested, but all the basics at a dirt-cheap price.
4X	ISA, PCI	15"/.28	800/989-9900	3361	748	Red-hot, full multimedia, modem. Limited data suggests reliability just below average.
4X	ISA, PCI	15"/.27	800/872-3539	3380	749	Great price but just 8MB of RAM. Limited survey responses indicate average reliability.
4X	ISA, PCI	15"/.28	800/999-1278	3357	750	Multimedia PC has rock-bottom price; slowest PC on the chart, monitor could be crisper.
4X	ISA, VLB	17"/.26	800/800-4662	3381	751	Fast, big monitor, 28.8-kbps modem, multimedia, three-year warranty. Unrated reliability.
4X	ISA, PCI	17"/.28	800/342-9388	3382	752	One of the fastest P-133 we've tested; full multimedia, big monitor—but we can't rate reliability.

[3] Fewer than 100 Reliability and Service Monitor responses. Rating is based on responses for this company and the average of responses for all companies. No score is shown if we received fewer than 20 reliability or service responses.

For more information about all products in this table, circle reader service no. 910.

Top 20 Budget Desktops

ONLY ONE OF THE PCS WE TESTED FOR THIS review makes the chart: HiQ's 14th-place Saturn Station, the first Pentium-166 to be a budget pick. At just $2215, it's a tempting deal, though we have little fax-back data on HiQ's service and reliability.

Buying a budget PC always demands some juggling to get the features you need: A 17-inch monitor costs hundreds extra—enough to buy a faster CPU and more RAM. So only two PCs here have big monitors: the NMC and the Tangent. Even the number one Dell has a 15-incher this month. Finding a budget PC from a company with proven reliability and service records takes work too. Of the vendors listed, only Compaq, Dell, and Digital get high marks on both factors in our reader survey.

1 Dell Dimension XPS P100c

LAST REVIEWED: March 1996

PROS: Great P-100 performance, 6X CD-ROM drive, strong reliability and service

CONS: On/off button is easy to mistake for floppy eject, no sound

With a 15-inch rather than a 17-inch monitor, this former Power Desktops mainstay costs $447 less than last month. At just $2252 with 16MB of RAM, a 1080MB hard drive, and a 6X CD-ROM drive, this hot P-100 is a shoo-in as Budget number one. (Sound will add another $99.) Reliability and service are excellent.

2 Vektron Multimedia P-100

LAST REVIEWED: March 1996

PROS: Fast Pentium-100 performance, great price, full multimedia

CONS: No weekend technical support

This $1695 P-100 minitower has more zip than most P-120s and sports 16MB of RAM, a 1080MB hard drive, a 4X CD-ROM drive, and a 14.4-kbps fax-modem. But we don't have solid data on the quality of Vektron's service and reliability.

3 DTK Quin 54M/P100

LAST REVIEWED: March 1996

PROS: Solid P-100 performance, 6X CD-ROM drive

CONS: Some cable clutter

This P-100 isn't as fast as the higher-ranked Dell and Vektron. You get 16MB of RAM, a 1080MB hard drive, a 6X CD-ROM drive, a two-year warranty, average service, and very good reliability.

4 Tempest Pentium Giga Media P5-100

LAST REVIEWED: March 1996

PROS: Excellent price, good-size hard drive, full multimedia, 14.4-kbps fax-modem

CONS: Not enough fax-back data to evaluate reliability and service

A $268 price drop to $1720 makes this PC a Best Buy this month. You get 16MB of RAM, a 1270MB hard drive, and so-so P-100 performance. The low price includes just a one-year warranty,

5 Gateway 2000 P5-75

LAST REVIEWED: March 1996

PROS: Excellent price, good performance, three-year warranty

CONS: No sound or secondary cache

This $1609 P-75 desktop package comes with a fine 15-inch Gateway Vivitron monitor, a 6X CD-ROM drive, and a fast 2MB ATI video card. Performance is okay with 8MB of RAM, but there's no secondary cache, even as an option. Our test unit had just an 850MB hard drive, and sound costs $99 extra. If you can afford it, consider the P5-120 (reviewed in March) or the P5-100 Family PC (April). For about $600 more than the P5-75, the fast P-120 model delivers 16MB of RAM, a 256K secondary cache, and a 1624MB hard drive. The average-performing P5-100 Family PC that we tested came with 16MB of RAM, a 28.8-kbps modem, and sound (but no secondary cache) for about $700 more than this Best Buy.

6 Dell OptiPlex GL+575

LAST REVIEWED: March 1996

PROS: Well built, network ready, 16MB of RAM

CONS: Small 540MB hard drive, limited expandability, no sound

7 Diamond DT-100

LAST REVIEWED: March 1996

PROS: Fully loaded, low price, solid performance, 6X CD-ROM drive, $100 price cut

CONS: Small 14-inch monitor, poor documentation

This quick, dirt-cheap P-100 minitower is a bargain hunters' special. It costs just $1545 with 16MB of RAM, a 1080MB hard drive, and a 6X CD-ROM drive. But you get just a 14-inch monitor and no sound card. Diamond's $1995 DT Super 150 has a similar modest configuration with a P-150 CPU, a compact case, and a larger 1280MB hard drive. Unfortunately, it has no free expansion slots.

8 Quantex QP5/100 M-3

LAST REVIEWED: March 1996

PROS: Fast, great $1899 price, 1280MB hard drive, full multimedia, 14.4-kbps fax-modem

CONS: Reliability and service somewhat below average

9 Digital Venturis 575

LAST REVIEWED: March 1996

PROS: Well designed and well constructed, excellent score for reliability

CONS: Small 14-inch monitor, limited expandability, no sound

Easiest. Save time with PhaserShare™ connectivity, PhaserLink™ remote control, and high-capacity trays and toners.

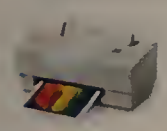
Finest. Sharpen your color images and text to 1200 x 1200 dpi.

Fastest. Maximize throughput to 14 PPM mono and 5 PPM full color.

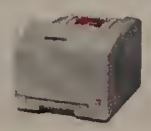
Color is color, unless time is money.

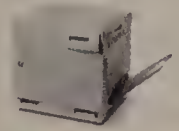
Reach for the new Phaser® 550 Color Laser from Tektronix. It whips through your workgroup's workload at 5 color pages a minute, 14 pages in black. It sharpens your image to a new dimension: 1200 x 1200 dpi, giving documents a razor-sharp edge over the competition. Text is crisp. Transparencies bright. Color blends are smooth and consistent. Color photos? Knock-outs. Connectivity is a snap, too, for PCs, workstations, Macs or any network. High-capacity features make high volume jobs a breeze. A standard web browser can manage it remotely. The Phaser 550 is supported by Tektronix, a Fortune 500 leader in workgroup color printers for 14 years. The price is right. The time for color is now. Just reach out and take it.

Adobe PostScript


Phaser 140

Phaser 240


NEW Phaser 340


NEW Phaser 550

Phaser 440

NEW Phaser 480X

Phaser 300i

Call 1-800-835-6100, Ext. 1285
http://www.tek.com/CPad?1285

Tektronix

© 1996 Tektronix Inc. All rights reserved

Circle 124 on reader service card

10 CompuTrend Premio 5x86-100

LAST REVIEWED: March 1996

PROS: Great $1599 price for loaded PC with multimedia, performs like a fast P-75

CONS: No weekend technical support

11 Compaq ProLinea 575e

LAST REVIEWED: May 1996

PROS: Low price, tidy interior, high-quality support

CONS: Poor performance, no multimedia, only one free drive bay

12 Austin PowerPlus 75

LAST REVIEWED: March 1996

PROS: Good performance, fax-modem

CONS: The 850MB hard drive is small, considering the price

This fast P-75 minitower has 16MB of RAM, full multimedia, and a 14.4-kbps fax-modem for $2099. The similar PowerPlus 100 (reviewed in March) is also fast—for $100 more.

13 Netis N5100 Media

LAST REVIEWED: May 1996

PROS: Quick performance, large hard disk, multimedia configuration

CONS: One-year parts warranty, no fax-back track record on reliability and service

This $2048 P-100 compact is fast and includes a big 1624MB hard drive. Two minitowers, the $2120 N5133DPS P-133 (reviewed in May) and the $2049 P-120 N5120 Media (April)—are similar values, although the N5120 Media also includes a 14.4-kbps modem.

14 HiQ Saturn Station

NEW THIS MONTH

PROS: Great price for an average-performing Pentium-166, 6X CD-ROM drive, good expandability

CONS: No system manual, so-so monitor, no fax-back track record on reliability and service

It's hard to believe you could find a P-166 PC anywhere for just $2215. But HiQ delivers with this minitower, cutting remarkably few corners in the process. You get 16MB of RAM, 256K of secondary cache, a 6X CD-ROM drive, a 1624MB hard drive, a 15-inch monitor, and a 2MB DRAM graphics adapter with integrated sound. Inside, two PCI slots, one PCI or ISA slot, two ISA slots, two SIMM sockets, and five drive bays are all free.

HiQ

HiQ's service policies include an excellent one-day turnaround policy on factory repairs. However, the low price buys a warranty that covers parts for just one year and labor for two. Our biggest issue is the lack of information on service and reliability. HiQ is a relative newcomer to the national scene and has elicited very few responses so far in our reader surveys. Despite the great price/performance/features balance, this lack of data keeps it from the top of the Budget chart.

15 Swan Pentium 75 Series

LAST REVIEWED: March 1996

PROS: Low price, integrated 14.4-kbps voice fax-modem, full multimedia

CONS: One of the slowest Pentium-75s we've tested

16 Micro Express MicroFlex-PCI/5133

LAST REVIEWED: April 1996

PROS: Excellent price for fast P-133 with 1624MB hard drive, full multimedia

CONS: Fax-back returns, though small in quantity, suggest below-average reliability

17 USA Flex Home/Office PT-120 Multimedia

NEW THIS MONTH

PROS: Attractive price, full multimedia, 14.4-kbps modem, good service policies

CONS: Meager 8MB of RAM leads to slow performance for a P-120

A $250 price cut to just $1999 puts this P-120 minitower with a 1080MB hard drive and a 15-inch monitor on the chart for the first time. (We initially tested it for our March issue.) Buy it with 16MB of RAM to get performance that lives up to its P-120 CPU. Service policies include a three-year warranty and round-the-clock tech support. We need more fax-back data to rate service, however.

18 Polywell Poly 4120P8

LAST REVIEWED: March 1996

PROS: Inexpensive, full multimedia

CONS: Slow, so-so monitor quality, not enough fax-back data to rate reliability and service

19 NMC Expert System

NEW THIS MONTH

PROS: Very fast for a P-133, big monitor, full multimedia, fast modem

CONS: Not enough fax-back responses to gauge reliability and service, no weekend tech support

First tested for our March issue, this quick $2399 minitower debuts here this month thanks to a $100 price drop. The 850MB hard drive is a bit small, but the 16MB of RAM, full multimedia configuration, 28.8-kbps fax-modem, big 17-inch monitor, and three-year warranty on parts and labor are rock solid.

20 Tangent MediaStar 5133/95

NEW THIS MONTH

PROS: Terrifically fast for a P-133, big monitor, full multimedia

CONS: Insufficient fax-back response to rate reliability and service, just 1MB of graphics RAM

Like many Tangent PCs we've reviewed, this P-133 system packs a powerful punch—and its PC WorldBench score of 191 is tops on our Budget chart. We first tested this full-size desktop in March, but it didn't make our Power chart. This month, a $300 price drop to $2495 makes the MediaStar 5133/95 a member of the Budget Top 20. It comes with 16MB of RAM, a 1080MB hard drive, full multimedia, a big 17-inch monitor, and a three-year warranty on parts and labor. When you order this system, however, pay a little more and get a graphics adapter with at least 2MB of DRAM.

DO NOT BITE THIS MONITOR.

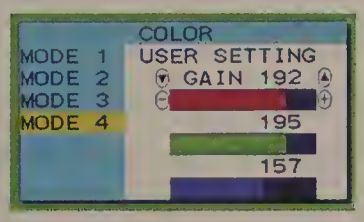
WARNING: The images you see on the new CTX PR900™ Professional Line Monitors are not real.

We say this because artists, graphic designers, and CAD/CAM users everywhere keep mistaking the PR900's sharp, distortion-free images for the objects they represent.

Maybe it's because the 21-inch PR900 offers the crispness of Diamondtron™ technology. With a colossal 19.6-inch viewable screen area and 0.31-mm aperture grille for uncommon contrast.

Or perhaps it's the PR900's 1600 x 1200 maximum resolution. And anti-glare, anti-static, anti-reflection screen. With vibrant colors that make other monitors pale in comparison.

In any case, with features like Windows® 95 Plug & Play, TCO '92 Certification, and Power Management—plus PC, Mac & SPARC compatibility—the PR900 is an unreal buy. Especially since it costs hundreds less than any monitor in its class.



The on-screen display (OSD) features over 30 user-friendly functions—for the most intricate adjustments.

Since seeing is believing, we invite you to visit your nearest CTX dealer. Just call **1-800-888-9052** or visit our web site at www.ctxintl.com. But remember—just look, don't bite.

CTX

Commitment To Excellence.

PR900 is a registered trademark of CTX. Other trademarks are the property of their respective owners.

See the new CTX PR900 at PC Expo, Booth #4562.

Circle 74 on reader service card

Everything you're looking for in PCs

You might not think of Unisys as a place to find state-of-the-art PCs for your company. But all that's changed with *Aquanta*™ PCs and servers. This new product line matches—and even surpasses—the best the PC world has to offer.

Aquanta means quality, with rigorous testing that ensures mainframe-class dependability for mission-critical applications.

Aquanta means performance, with one of the industry's most powerful and scalable product lines—including multiprocessor Pentium and Pentium Pro models, SMP servers and fault-resilient servers.

Aquanta means compatibility, with support for all major operating systems and networks to simplify client/server computing.

©1996 Unisys Corporation. Aquanta is a trademark of Unisys Corporation. The Intel Inside Logo, Pentium and Pentium Pro are registered trademarks of Intel Corporation.

rom a place you probably didn't look.

Aquanta means support, through Unisys worldwide experience implementing technology across departments, companies and countries.

And finally, *Aquanta* means this: While we may not be the first place you look for PCs, we just might be the last.

http://www.unisys.com/adv or 1-800-874-8647, ext. 244

UNISYS

The Information Management Company

THE TOP 20

PC WORLD

NOTEBOOK PCs

1 **WinBook XP5 P120**
Great price, performance, features.

POWER SYSTEMS	Last month	Months on chart	Last reviewed	Overall rating[1]	PC WorldBench score	Reliability/ service rating	Price	CPU	RAM (MB)	Hard drive (MB)	Multi-media
1 WinBook XP5 P120	2	3	Apr 96	90	146	61/79[4]	$3499	Pentium-120	16	1295	sound
2 Gateway 2000 Solo S5-90XL	3	3	Apr 96	90	139	72[4]/70[4]	$3599	Pentium-90	16	810	sound/CD
3 Dell Latitude XPi P120ST	–	1	current	89	138	78[4]/71[4]	$4300	Pentium-120	16	810	–
4 Toshiba Tecra 700CT	–	1	current	89	141	85/71[4]	$5333	Pentium-120	16	1215	sound/CD
5 Toshiba Satellite Pro 400CDT	1	6	Mar 96	88	124	85/71[4]	$4458	Pentium-75	16	810	sound/CD
6 IBM ThinkPad 760C	9	2	May 96	85	121	80/69[4]	$6184	Pentium-90	16	720	sound
7 Toshiba Portégé 610CT	11	5	Mar 96	85	99	85/71[4]	$3949	Pentium-90	8	720	sound
8 Sager P-120	–	1	current	85	146	[4]	$3150	Pentium-120	16	814	sound/CD
9 NEC Versa 4080H	8	3	Apr 96	84	132	77[4]/69[4]	$5474	Pentium-120	16	1080	sound/CD
10 Texas Instruments TravelMate 5100	15	2	Mar 96	84	125	66[4]/70[4]	$3899	Pentium-90	16	1160	sound
BUDGET SYSTEMS											
1 Dell Latitude LX 4100D	1	8	Mar 96	89	84	78[4]/71[4]	$1899	DX4-100	8	420	–
2 Toshiba Satellite 100CS	–	1	current	89	87	85/71[4]	$1999	Pentium-75	8	540	–
3 Toshiba Satellite T2130CS	2	4	Mar 96	88	65	85/71[4]	$1599	DX4-75	8	503	–
4 Dell Latitude XPi P75D	–	1	Mar 96	86	106	78[4]/71[4]	$2499	Pentium-75	16	540	–
5 Mega Image MegaBook 880	–	1	current	85	118	[4]	$2395	Pentium-90	16	543	sound
6 MidWest Micro SoundBook II	–	1	current	83	140	60[4]/54[4]	$2699	Pentium-90	16	720	sound
7 Hertz Z-Optima 486 D100 X4E	5	2	May 96	82	98	[4]	$2195	DX4-100	16	810	–
8 Sharp PC 3020	–	1	current	81	79	[4]	$1899	Cx5x86-100	8	500	–
9 NEC Versa 2000C	6	4	Mar 96	81	59	77[4]/69[4]	$2099	DX4-75	8	540	–
10 AST Ascentia 950N	7	2	May 96	81	83	70[4]/64[4]	$2455	Pentium-75	8	810	sound

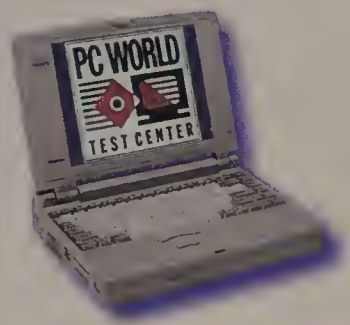
BEST BUY

[1] Percent contribution to overall rating for power notebook: PC WorldBench score (22); reliability (22); features and design (16); price (14); service and support (10); battery (8); weight (8). Percent contribution to overall rating for budget notebooks is the same except for price (22) and PC WorldBench score (14). [2] CA=color active, CD=color dual-scan. [3] To order fax copies of system reviews, call 800/434-4495 from a touch-tone phone and use your credit card. You can order next month's reviews in advance: Budget Desktop, Power Desktop, or Notebook PCs Top 20 charts and capsule reviews ($9.95, available May 27). You can also order a previous month's Top 20 chart with capsule reviews plus

2 **Gateway 2000 Solo S5-90XL**
Low-cost multimedia.

1 **Dell Latitude LX 4100D**
Ultracheap, great battery.

2 **Toshiba Satellite 100CS**
Top budget reliability.



Weight (pounds)	Battery life (hours)	Screen type/ size [2]	Vendor contact number	Fax reprint number [3]	Reader service no.	Comments
7.4	6:19	CA/10.3"	800/468-2162	3736	753	Fast, but low reliability. For $400 and $800 less, P-90 and P-75 models are competitive.
8.2	5:19	CA/10.4"	800/846-2000	3739	754	$400 price drop lifts fast, light multimedia note with excellent battery to Best Buy status.
7.4	4:43	CA/10.4"	800/613-3355	3750	755	No multimedia but nice balance of speed, features. P-90 costs $300 less, is also a good deal.
10.4	4:43	CA/11.3"	800/457-7777	3751	756	Fast, heavy, feature-rich multimedia model has a jumbo hard drive and a price to match.
9	4:21	CA/10.4"	800/457-7777	3728	757	Fast, feature-laden. The P-90 version is a little faster but adds $500 to the price.
8.2	5:09	CA/12.1"	800/772-2227	3747	—	High price for a 720MB hard drive, but it has extra-big screen, fine battery, great keyboard.
6.4	5:09	CA/9.5"	800/457-7777	3752	758	Slow, only 8MB of RAM; but good design, fine battery make it one of the best small notes.
8	1:17	CA/10.3"	800/669-1624	3753	759	Ultrafast, a winner on price, features—but battery life is terrible; reliability, service unknown.
8.2	3:35	CA/10.4"	800/632-4636	3741	760	Feature-rich, a valid desktop replacement; but it's pricey, and the battery is just so-so.
7.4	5:06	CA/10.4"	800/848-3927	3714	761	Fast, big hard disk, great battery and warranty; price is high though, and reliability's average.
7.2	5:11	CD/10.3"	800/613-3355	3716	762	Fine battery, small hard disk; $750 more buys LX 4100T (active color, more RAM, storage).
7.6	3:35	CD/10.4"	800/457-7777	3754	763	The price is right on this reliable economy model, if you can live with middling battery life.
7.2	3:01	CD/10.4"	800/457-7777	3744	764	Fine reliability, low price make up for slow speed. Active-color T2130CT costs $500 more.
7.4	3:28	CD/10.3"	800/613-3355	3713	765	A $500 price drop makes this affordable power notebook a budget contender.
7.4	3:06	CA/10.3"	800/250-1876	3755	766	Low-cost, fast performance, active-matrix screen. We lack reliability and service data.
7	3:04	CD/10.3"	800/871-9128	3756	767	Editor's note: At press time, MidWest Micro discontinued this notebook.
8.2	2:35	CA/9.5"	800/232-8737	3748	768	Good price, fast. But it's heavy; lacks sound; battery life is poor; reliability, service unknown.
7.2	4:28	CD/10.4"	800/237-4277	3757	769	Balance of good features and low price—but we don't have data to rate reliability and service.
7.8	3:16	CA/9.5"	800/632-4636	3722	770	Expensive and slow for a budget note, but built to last; nice, though small, active screen.
7.2	5:11	CA/10.3"	800/876-4278	3729	771	Very slow for a P-75, but it has long battery life; service and reliability scores are middling.

Features Comparison and Test Report ($4.50) and individual capsule reviews with Feature Comparison and Test Report ($1.50 each). Prices effective for the U.S. and Canada. Foreign orders are $15 for advance Top 20s, $8 for previous months' Top 20s, and $4 for individual reviews. [4] Fewer than 100 Reliability and Service Monitor responses. Rating is based on responses for this company and the average of responses for all companies. No score is shown if we received fewer than 20 reliability or service responses.

For more information about all products in this table, circle reader service no. 911.

Top 20 Notebook PCs

WE HAVE A NEW NUMBER ONE POWER NOTEBOOK: WinBook's $3499 XP5 P120. It's one of the two fastest systems on the chart and has the biggest hard disk and best battery life. Dell's Latitude LX 4100D is still our top budget portable. Toshiba's $1999 Satellite 100CS P-75, at budget number two, is one of seven new notebooks in this Top 20.

New on the power side, the $5333 Toshiba Tecra 700CT at number four is a fast, high-priced beauty—a P-120 with lots of RAM and hard disk space, a gorgeous 11.3-inch screen, and full multimedia. Sager's fast P-120, debuting at number eight, costs just $3150 with a CD-ROM drive, but its battery life is poor. For the best compromise between power and price, consider Dell's number three XPi P120ST. It lacks the Toshiba's CD-ROM drive and oversize screen, but performance is good, and the price is a more manageable $4300.

WinBook XP5 P120

LAST REVIEWED: April 1996

PROS: Ultrafast, huge hard drive, 6.3 hour battery life, fax-modem

CONS: One-year warranty at this price, low reliability rating

With a $300 price drop since last month, an already excellent deal becomes even better. For $3499, you get performance rivaling that of many P-100 *desktops*, wrapped up in a trim 7.4-pound package. It's loaded with 16MB of RAM and a huge 1295MB hard drive. And WinBook throws in a 14.4-kbps fax-modem, built-in sound, and a vivid 10.3-inch active screen. If you need an even less expensive power notebook, WinBook also sells similar P-90 and P-75 versions with smaller 814MB hard drives for $400 and $800 less. (The P-75 we reviewed lacks sound.) WinBook gets a fabulous fax-back rating for service, despite its minimal one-year warranty. Conversely, its reliability score is the lowest on the power chart.

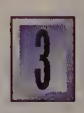
Gateway 2000 Solo S5-90XL

LAST REVIEWED: April 1996

PROS: Fast P-90 with 5.3-hour battery life, CD-ROM drive, Microsoft Office Professional 95

CONS: Uncomfortable keyboard, insufficient brightness control, one-year warranty

Like our other power note Best Buy, the Solo S5-90XL gives you a lot for your money. For $3599—$400 less than last month—this multimedia P-90 delivers 16MB of RAM, an 810MB hard disk, and speed that competes with some of the best P-120 notebooks. And to make this package even more impressive, Gateway throws in a modular 4X CD-ROM drive and a software bundle that includes Office 95 Professional. Travelers will appreciate the long battery life and the ability to lighten the 8.2-pound load by leaving the CD-ROM drive behind. Gateway's service and reliability scores are decent, but the price includes only a one-year warranty.



Dell Latitude XPi P120ST

NEW THIS MONTH

PROS: Fast, long battery life, solid service and support

CONS: Mushy keyboard, some undersize keys

This fast, competitively priced system is bound to turn heads. For $4300, it packs 16MB of RAM and an 810MB removable hard drive into its sleek black case. The XPi P120ST weighs in at a trim 7.4 pounds, and each charge of the lithium ion battery cranked out 4.75 hours of power in our tests—excellent for a P-120. You get a good-looking 10.4-inch active color display, and the keyboard is sturdy and nicely laid out, although its <Shift> and <Tab> keys are small. The diminutive trackball is precise and easy to maneuver.

Dell Latitude P120ST

Dell's documentation is generally excellent, and the system manual is well written, with a detailed troubleshooting guide. The price includes a three-year warranty on parts and labor, on-site service for a year, and round-the-clock tech support. In our surveys, *PC World* readers give high marks to Dell service and reliability.

We also evaluated the similar Latitude XPi P90T, a $3979 P-90—a good choice if you don't need P-120 speed. It ran an adequate but unimpressive 3.5 hours per charge in our battery tests.

Toshiba Tecra 700CT

NEW THIS MONTH

PROS: Large screen, CD-ROM drive, great performance, good battery life, superb service policies

CONS: Heavy and expensive, hard drive not removable

Toshiba's new Tecra 700CT isn't for everyone, but it should satisfy high-end buyers who don't mind paying for a rich array of features. The $5333 price buys a very fast P-120 with 16MB of RAM, a huge 1215MB hard drive, a 4X CD-ROM drive, built-in sound and mike, an infrared port, and a big, bright 11.3-inch active-matrix color screen. The keyboard is roomy and comfortable with an embedded minijoystick pointing device. And the 4.75-hour battery life is strong for a P-120 notebook.

Toshiba Tecra

With all its components, the system weighs in at a shoulder-straining 10.4 pounds. As usual, Toshiba's documentation is excellent, and the 700CT comes with a three-year warranty on parts and labor and round-the-clock tech support. Toshiba consistently ranks high in our reliability and service surveys.

Our engineers blew out a few pocket protectors on this one.

To say that ViewSonic's new PT810 SonicTron™ 21" (19.5" viewable) monitor has a great picture hardly does it justice. Actually, it's better than great. Even the most particular CAD/CAM/CAE users and desktop publishers are staring in wide-eyed amazement.

Our engineers went back to the drawing boards to create a monitor that delivers high contrast images with clarity and chromatic color far more intense than anything close to its price range.

"It's as easy to adjust as it is to look at."

OnView™ screen controls let you easily make adjustments right on the screen, no guesswork.

If you've got a question, just call and one of our engineers will answer it. Other SonicTron pluses include Plug & Play+ for automatic configuration of the graphics controller and both PC and MAC® compatibility.*

Call (800) 888-8583 for a dealer where you can see for yourself. It'll blow your mind.

ViewSonic®

SPRING 1996 COMDEX® BOOTH M2908

1996 CADALYST ★★★★★ HIGHLY RECOMMENDED

*Requires DDC compatible video card.

Agent Code 42

(800) 888-8583 Product Information • (909) 869-7976 • Call FaxSonic at (909) 869-7318 Request Doc. 163 (24-hour fax-on-demand) • Internet: http://www.viewsonic.com • © 1996 ViewSonic Corporation. Corporate names and trademarks are the property of their respective companies.

Circle 224 on reader service card

5 Toshiba Satellite Pro 400CDT

LAST REVIEWED: March 1996

PROS: Fast, good 4.3-hour battery life, top-notch reliability, quad-speed CD-ROM drive

CONS: Expensive, heavy at 9 pounds

This month, we learned that Toshiba has been pricing this fast, classy P-75 note with 8MB of RAM rather than the 16MB we tested it with. Toshiba's correction increases the price $459 to $4458, and it bumps the system from first place all the way down to fifth. The Satellite Pro 400CDT comes with an 810MB hard disk, a CD-ROM drive, sound, and a bright 10.4-inch screen. An extra $1000 buys you a P-90 version, but it's only marginally faster.

6 IBM ThinkPad 760C

LAST REVIEWED: May 1996

PROS: Fast for a P-90, 5-hour–plus battery life, 12.1-inch screen, sound, great tiltable keyboard

CONS: Very expensive at $6184, swapping batteries is awkward

7 Toshiba Portégé 610CT

LAST REVIEWED: March 1996

PROS: Only 6.4 pounds, 5-hour–plus battery life, built-in audio, sturdy construction

CONS: Slow for a $3949 P-90, cramped keyboard, 9.5-inch screen

8 Sager P-120

NEW THIS MONTH

PROS: Blazing fast, low price, CD-ROM drive, high-quality screen

CONS: Short battery life, jargon-filled system manual, no weekend tech support

Very high performance and a low $3150 price earn this note a spot on our power chart this month—despite its abysmal 77-minute battery life and thin tech support. Its features are excellent, with 16MB of RAM, an 814MB hard disk, a 10.3-inch active screen, a CD-ROM drive, and sound. The keyboard has good-size keys, and the touchpad is responsive.

Sager

Service policies are minimal, with just 8 hours of tech support each weekday and a warranty of one year. Finally, Sager hasn't established much of a track record for reliability and service—we lack sufficient data to speak with authority on either.

9 NEC Versa 4080H

LAST REVIEWED: April 1996

PROS: P-120 speed, fine keyboard, 1080MB hard disk, 4X CD-ROM drive, 800 by 600 screen

CONS: High $5474 price, muted screen colors

10 Texas Instruments TravelMate 5100

LAST REVIEWED: March 1996

PROS: Fast P-90 performance, 5-hour–plus battery life, 1160MB hard drive

CONS: No weekend tech support

Budget Notebooks

1 Dell Latitude LX 4100D

LAST REVIEWED: March 1996

PROS: Inexpensive, fast for a DX4-100, long battery life, excellent documentation

CONS: Somewhat dull screen, cramped keyboard

This $1899 Latitude is our top choice among low-cost notebooks for the third straight month. It's fast for a DX4-100 note, despite a minimal 8MB of RAM. Battery life of more than 5 hours is excellent, and the low price includes an optional three-year warranty on parts and labor. Dell's reliability and service get consistently high marks from readers. Our quibbles include the 420MB hard drive—way too small for a Win 95 machine—and a 10.3-inch dual-scan display that could be brighter. Dell's LX 4100T (reviewed in March) costs about $750 more; it's similar except for an active color screen, 16MB of RAM, an 810MB hard drive, and 4.5 hours of battery life.

2 Toshiba Satellite 100CS

NEW THIS MONTH

PROS: Large keyboard, excellent manual, outstanding reliability and service

CONS: Sluggish for a P-75, hard drive not removable

One of five Toshibas on our charts this month, the $1999 Satellite 100CS is a terrific deal for the cost conscious. This 7.6-pounder does perform below par for a P-75 and is modestly set up with 8MB of RAM and a 540MB hard disk. Still, there's plenty to recommend it, such as a large, comfortable keyboard and an accurate, responsive minijoystick pointing device. The 10.4-inch dual-scan color display is crisp and bright, and the NiMH battery pack lasted a respectable 3.5 hours in our tests.

Toshiba Satellite

Toshiba's documentation is excellent, and you get a three-year warranty and round-the-clock tech support. Finally, readers consistently rate Toshiba's service and reliability very high.

3 Toshiba Satellite T2130CS

LAST REVIEWED March 1996

PROS: Well designed; low price includes three-year warranty; excellent service and reliability

CONS: Sluggish performance

DX4-75s are low-end today, but for just $1599, this 7.2-pounder is a surprisingly good value. It has 8MB of RAM, a 503MB hard disk, and a crisp 10.4-inch dual-scan display. The $2099 Satellite T2130CT, another worthy notebook, offers an active color screen.

4 Dell Latitude XPi P75D

LAST REVIEWED: March 1996

PROS: Good design and construction, three-year warranty

CONS: None significant

Okidata makes a full line of Windows, DOS and Adobe™ PostScript™ compatible personal business printers. We have 24 years and over 9 million printers worth of experience. Start something. Start anything. We'll finish it. For a full spec sheet, call Fax Back 1-800-654-6651. Ask for document 1014.

*Estimated retail price in the U.S. Actual price may vary. System requirements: 8 MB PC RAM & 8 MB free space on hard drive; Windows 3.1, 3.11, or Windows 95. ©1996 Okidata Reg. T.M., M.D. Oki Electric Industry Co., Ltd. They're your ideas. We just help. T.M. Oki America, Inc. Adobe, PostScript T.M. Adobe Systems, Inc. Windows Reg. T.M. Microsoft Corp.

VISIO

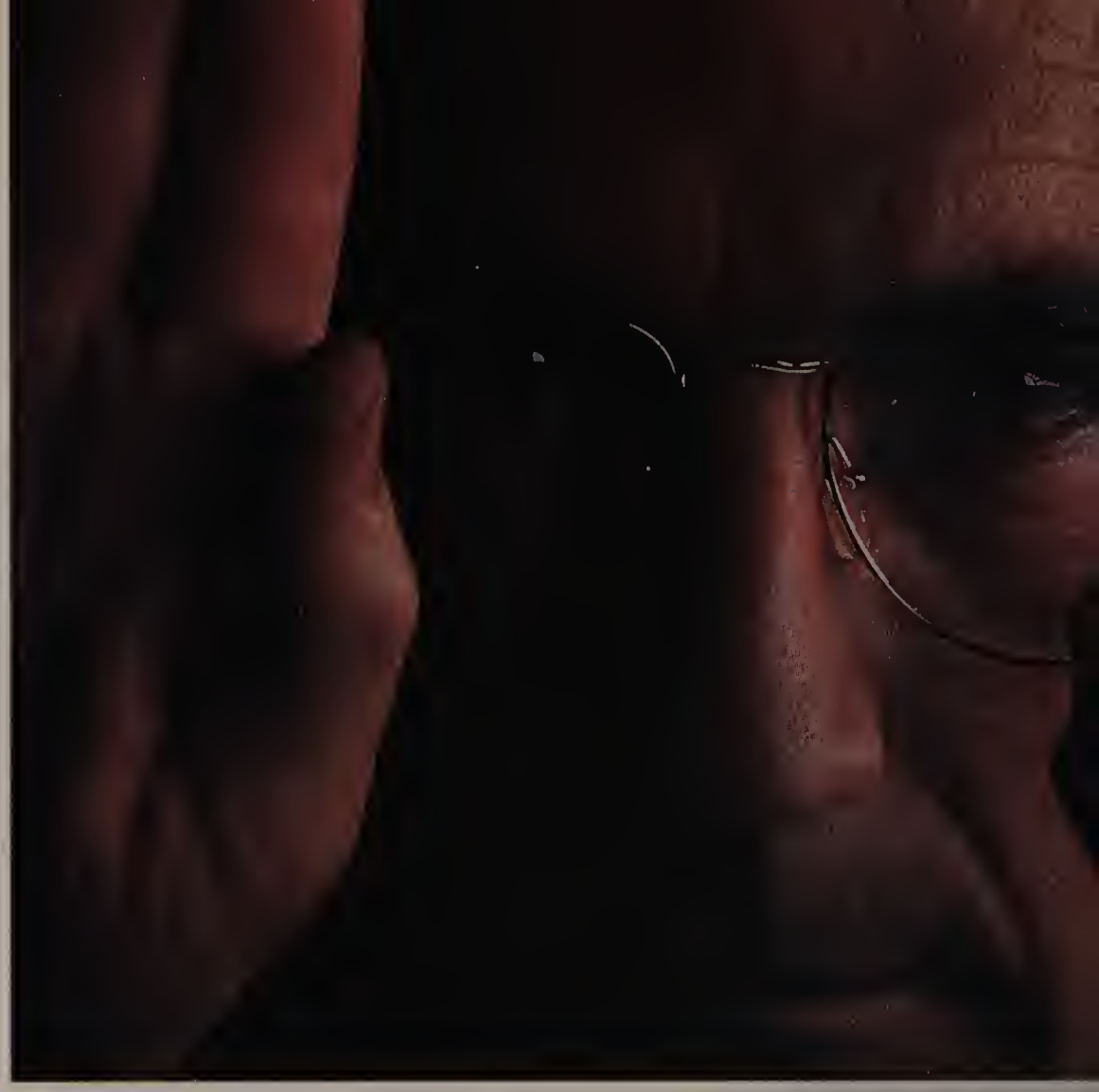
Graphics technology

that will change the way you work.

Look who's using it.

Try it.

See what it can do for you.



How you look

Amoco is saving 5% per project or up to 20 million dollars by using Visio to better plan and manage its oil exploration. Other companies use it to save time. Still others to increase productivity. You'll find lots of companies have adopted Visio. Companies such as Chrysler, National Semiconductor and Fluor Daniel.

© 1996 Visio Corporation. Visio and SmartShapes are registered trademarks of Visio Corporation. All other trademarks are held by their respective companies.

Look at things with Visio and suddenly everything becomes clearer. You can see gaps in your organization, conflicts in timelines or weaknesses in process flow. No, you don't have some secret sixth sense. You have graphics technology that can be integrated in every department, across your entire company. Our SmartShapes® symbols let you create network diagrams, organizational charts and engineering schematics that are both intuitive and intelligent. Visio and Visio Technical are also fully compatible with Word, Excel, Lotus Notes and AutoCAD. If you're ready to see more, call 800-24-VISIO, ext. F30. For corporate evaluation call 800-VISIO-07.

at things *can profoundly affect* what you see

VISIO®

http://www.visio.com

5 Mega Image MegaBook 880

NEW THIS MONTH

PROS: Clever design, built-in sound

CONS: Some keys too small, one-year warranty

The $2395 Mega Image MegaBook 880 is one of the fastest notebooks you can get for the price. It performs on a par with its Pentium-90 peers and comes with 16MB of RAM and a 543MB removable hard drive. The sturdy MegaBook is reasonably light at 7.4 pounds, and it includes sound and stereo speakers.

Mega Image

The design is generally pleasing: A good-looking 10.3-inch active screen rests above twin speakers, and the front-and-center trackball is precise and responsive. The springy keys have full travel, but undersize backspace, Enter, and cursor keys make fast typing difficult. A bonus: The two stacked PC Card slots can accept a Type II and a Type III card at the same time. Battery life is just adequate at a little over 3 hours, and the warranty is a minimal one year, but toll-free tech support is available 12 hours a day, six days a week. Like many small companies, Mega Image hasn't established a large enough customer base to rank in our reliability and service surveys.

6 MidWest Micro SoundBook II

NEW THIS MONTH

PROS: Excellent performance, built-in sound, three-year warranty

CONS: Low service and reliability scores, dull screen colors, cramped keyboard

Editor's note: At press time, MidWest Micro told us it was discontinuing all its current notebooks. The likelihood of your being able to buy this product is slim. The company plans to market new notebooks soon, and we'll review them as they become available.

MidWest Micro

This fast $2699 P-90 had a PC WorldBench score of 140. It had 16MB of RAM, a 720MB hard disk, a 10.3-inch dual-scan display, and built-in sound.

Unfortunately, this 7-pounder had a cramped keyboard; our hands often brushed the touchpad while typing, moving the mouse pointer unintentionally. The NiMH battery lasted only about 3 hours per charge.

MidWest Micro's three-year warranty was a strong offering in a market where many vendors still provide coverage for just one year. So why didn't this attractive notebook rank higher? Reliability—or lack of it. The company's reliability and service scores were among the lowest for notebook vendors in our reader survey.

7 Hertz Z-Optima 486 D100 X4E

LAST REVIEWED: May 1996

PROS: Outstanding price for 16MB of RAM and 810MB hard drive, good DX4-100 performance

CONS: Mediocre battery life, smallish display

8 Sharp PC 3020

NEW THIS MONTH

PROS: Attractive price, good battery life, infrared port with software for desktops and palmtops

CONS: Sluggish for a Cx5x86-100, just a one-year warranty at this price

Sharp's latest budget notebook is the $1899 PC 3020. This trim 7.2-pounder comes with 8MB of RAM and a 500MB hard drive. Although it's slow for a Cyrix 5x86-100, you get a crisp, vivid 10.4-inch dual-scan screen, a well laid out keyboard, and a responsive touchpad. Battery life is also good at 4.5 hours. Sharp offers nonstop tech support, but the warranty is just one year. Despite the company's big name, we haven't received enough fax-back surveys from Sharp customers to rank its reliability or service.

Sharp

9 NEC Versa 2000C

LAST REVIEWED: March 1996

PROS: Nice-looking active-matrix color screen, 14.4-kbps fax-modem, good reliability

CONS: Slowest notebook on the chart

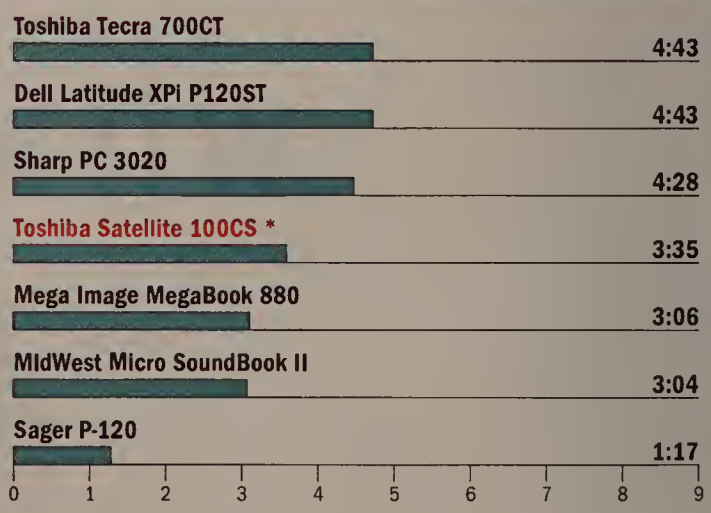
10 AST Ascentia 950N

LAST REVIEWED: May 1996

PROS: Built-in speakers and microphone, big hard drive, 5-hour–plus battery life

CONS: Performance is slow for a Pentium-75

TEST REPORT Battery Life



* Best Buy

Time in hours:minutes.

Methodology
We drain and fully recharge the battery twice and set power-saving options to match a consistent profile where possible. Office workers use Windows 95 applications, periodically saving and allowing regular idle time. Notebooks are rotated among workers. We report the time elapsed when the notebook shuts itself off.

Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

Talk to Me, Baby.

VoiceView® *lets the user quickly alternate between* ***talking on the phone and sending files in the same call****, making communications easy and seamless. New ways of conducting business are already in place with airline reservations, on line banking and tele-shopping.*

The included miniature headset and communications software help create a ***personal voice mail*** *system on your laptop. The DataVoice™ 3400 answers your phone, plays your recorded greeting, records messages, and stores them on your laptop's hard drive.*

Optional cables connect the DataVoice 3400 to most ***cellular phones****, including Motorola® Flip phones! Stay connected, no matter where you are. MNP10EC protocol assures the highest quality cellular connections.*

Announcing another TDK first in the world of PC Cards and the next generation in modems—The DataVoice™ 3400.

The first modem PC Card with Radish™ VoiceView® capabilities, the **DataVoice 3400** supports V.34 28,800 bit/sec data, 14,400 bit/sec send and receive fax, data compression, and error correction using an on-card DAA phone line interface.

All TDK's PC Cards are guaranteed compatible with existing and future laptops. TDK's family of PC Cards also includes a line of Ethernet LAN cards, and fully certified international modem and LAN cards.

What every laptop needs, what every user shouldn't be without. Voice your opinion—ask for TDK.

14.4 Data/Fax Modem · *28.8/14.4 Data/Fax Modem* · *28.8/14.4 International Data/Fax Modem* · *28.8/14.4 Data/Fax Modem with Voice* · *10Base-T & 2 LAN* · *10Base-T LAN* · *10Base-T 3.3v LAN*

TDK® Systems

VoiceView® TALKSHOP™

SPECTRUM CONNECTED®

E-mail: answers@tsd.ssi1.com http://www.tdksystems.com 1-800-999-4TDK

©TDK Systems. All trademarks are registered trademarks of their respective owners.

Designed for Microsoft® Windows®95

Also compatible with DOS, Windows NT and OS/2

Circle 226 on reader service card

FEATURES COMPARISON This Month's Contenders—Desktops

● = Yes ○ = No

n/a = not applicable

Standard features	Digital Celebris GL 5166ST	HiQ Saturn Station	Swan PowerHouse P-166
Street price as of 4/4/96 [1]	$3999	$2215	$2549
CPU	Pentium-166	Pentium-166	Pentium-166
CPU/upgrade socket	320-pin ZIF	320-pin ZIF	320-pin ZIF
BIOS	Phoenix v1.70 7/25/95	Award Plug and Play v1.0A 11/20/95	Award Modular v4.50 11/17/95
Installed/maximum RAM (MB)	16/128	16/128	16/128
SIMM sockets/number free	4/2	4/2	4/2
Secondary RAM cache installed/maximum (K)	512/512	256/512	256/512
Case style	minitower	minitower	minitower
Free externally accessible 3½-inch/5¼-inch drive bays	0/2	1/2	0/3
Free internal 3½-inch/5¼-inch drive bays	1/0	2/0	3/0
Free 16-bit ISA expansion slots	4 [2]	3 [3]	3 [3]
Free 32-bit PCI expansion slots	2 [2]	3 [3]	3 [3]
Hard disk	Quantum Fireball 1280	WD Caviar 31600	WD Caviar 31600
Size (MB)	1280	1624	1624
Adapter	integrated EIDE	integrated EIDE	integrated EIDE
Floppy drives (MB)	1.44	1.44	1.44
Graphics adapter	Matrox Power Graphics/TVP	ATI-264CT	STB PowerGraph 64 Video
Installed memory (MB)/type	2/WRAM	2/DRAM	1/DRAM
Monitor	Digital PCXCV-AC	Hitachi Super Scan Pro 15	Sampo KM-500
Tube/viewable diagonal (inches)	15/13.5	15/13.8	15/14
Dot pitch (mm)	.28	.28	.28
Modem speed for fax/data (kbps)	n/a	n/a	n/a
Sound board	integrated 16-bit	integrated 16-bit	○
CD-ROM drive	Toshiba XM-5302 TA	Creative Labs CD620E	Lxycon CDX-600
Drive speed	4X	6X	6X
Parallel/serial/mouse/SCSI ports	1/2/1/0	1/2/0/0	1/2/1/0
Service and support			
Warranty for parts/labor (years)	3/3	1/2	1/1
30-day money-back guarantee	●	●	●
On-site service first-year price	free	$79 [4]	free
Repair turnaround policy (days at service center)	○	1	○
Daily toll-free phone support (hours)	24	9	9
Weekend support	●	● [5]	● [5]
On-line support sites	AOL, BBS, CIS, WWW	BBS, WWW	BBS, WWW
Automated fax support	●	●	●

[1] All systems priced as configured with Windows 95, VGA and color monitor, keyboard, and mouse or other pointing device. Price is direct or based on vendor estimate.

[2] Two less 16-bit slots available when all PCI slots are filled, and vice versa.

[3] One less 16-bit slot available when all PCI slots are filled, and vice versa.

[4] Covers two years.

[5] Saturdays only.

Desktop Snapshots

These systems were tested along with the others but didn't score high enough to reach the Top 20 charts.

Acma zPower 166

PROS: Fine 17-inch monitor, PC Card slots, big software bundle

CONS: Pricey; short tech-support hours

This quick P-166 tower's plush appointments include a 6X CD-ROM drive and a 28.8-kbps fax-modem. But for $4195, you can do better. *Acma Computers, 800/786-6888, 510/623-1212* **Reader service no. 786**

Alaris P-133

PROS: Great price for a P-133 multimedia system

CONS: Tight interior, poor manual, no toll-free tech support

This $2499 multimedia P-133 desktop with a 14.4-kbps modem isn't a bad deal, but it runs more like a P-120. *Alaris, 800/317-2348, 510/770-5700* **Reader service no. 787**

Amax Power Station P-166F

PROS: 17-inch monitor, AWE32 sound, 28.8 voice fax-modem

CONS: One-year warranty at this price, no weekend tech support

This fast top-end tower almost makes it, with a fine software bundle and a good $3419 price. *Amax Engineering, 800/800-6328, 510/651-8886* **Reader service no. 788**

AST Bravo MS-T P/100

PROS: Expandable; three-year warranty, 24-hour tech support

CONS: Expensive for a feature-thin P-100 with average speed

$2500 is a lot to pay for a minitower with 16MB of RAM, a 1270MB hard disk, sound (but no CD-ROM drive), a 15-inch monitor, and 1MB of graphics RAM. *AST Computers, 800/876-4278* **Reader service no. 789**

CompuTrend Premio Triton P-166

PROS: Long warranty, great video subsystem, 6X CD-ROM drive

CONS: No weekend tech support

This big, premium tower comes with 16MB of RAM, a 1280MB hard drive, a 4MB VRAM video card, a 17-inch monitor, and a three-year warranty. Thin tech support hours and the lack of a verified reliability and service track record keep it off our chart. *CompuTrend Systems, 800/677-6477, 818/333-5121* **Reader service no. 790**

Simply Sensational.

Visual Sensations™

What would you call a multimedia monitor series with the best price/performance ratio in the industry? What if it included a 17-inch (15.9-inch viewable diagonal) model with powerful, high-quality integrated speakers, a crisp .28mm dot pitch, OSD digital controls, and the lowest price around?

We call it our *Visual Sensations*™ Series. The most feature-sensible, cost-effective monitor family available.

Call today for more information. Once you see our *Visual Sensations* Series, you'll agree it's simply sensational.

For full product information check out our web site at http://www.kdsusa.com,
For faxed documents, call our Fax Back service at (800) 551-2589.

Circle 170 on reader service card

KDS

The Vision Of Price & Performance

12300 Edison Way, Garden Grove, CA 92641
(714) 379-5599 • FAX (714) 379-5595

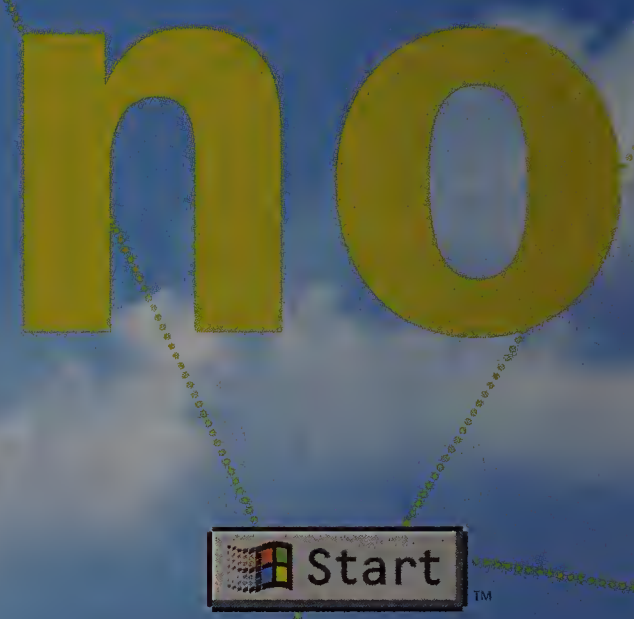
© 1996 KOREA DATA SYSTEMS CO. LTD.

Microsoft Office. Leading applications designed for Windows 95.

With Microsoft® Office for Windows® 95, your ideas flow seamlessly, intuitively, and work moves exactly the way you want. Microsoft Excel, Word, PowerPoint,® Microsoft Access, and Schedule+ were designed to work together in more ways, in faster ways. Manage your key contacts in Schedule+ and drop addresses into Word when you write them letters. Convert a list in Microsoft Excel into a relational database in Microsoft Access. You sit down to work and, now more than ever, the software conforms to the task.

The programs also get out of your way by revealing their capabilities intuitively. IntelliSense™ technology inside Microsoft Office means each program can sense what you are trying to do and actually execute many formatting and repetitive data entry tasks automatically. Not in a "mind of its own" sort of way, but in ways that accelerate the pace of your work. (To create a numbered list in Word, you just type *1.* and your thought, hit Enter, and *2.* appears automatically.) If you ever have a question on how to do something, just type it in using your own words, and the Answer Wizard will walk you through the task step-by-step.

This is Microsoft Office for Windows 95. Using the power and simplicity of the Windows 95 operating system to let you focus on your work, not on your software.



To see a Microsoft Office demo and download free software, go to http://www.microsoft.com/msoffice

Microsoft®

WHERE DO YOU WANT TO GO TODAY?™

No barriers between your ideas and other people.

You can use the new Internet Assistants for Microsoft Excel, Word, and PowerPoint to create home pages on the World Wide Web. (Just download the tools from our Web site.) When you save a document, choose HTML format, and it's ready to post onto the Web. Also use Microsoft Word to communicate more clearly through e-mail or the Internet. Create your message inside Word, using its formatting options like italic, bold, indented paragraphs, and bulleted lists to emphasize your point. Then send the message without ever closing out of Word. Inside your company and out, Microsoft Office makes it easier for people to access your ideas, work together to perfect them, and collaborate on how to implement them.

walls between you and your ideas

No barriers between programs.

With Microsoft Office, you don't have to make your thought process conform to your computer's process. Use the Office Binder to create a single document (a marketing report, perhaps) that uses files from several Microsoft Office programs. Combine a cover letter, financial projections, and professional-looking charts and graphs into one file. Save it and print it as one. Open it and have all the applications it uses launch at once. You spend less time going back and forth between programs. Less time working around obstacles. More time focusing on the work at hand.

Data Storage DataStor P5-133

PROS: Affordable; good-looking multimedia monitor

CONS: Just 9 hours of tech support per weekday

This P-133 multimedia tower is priced at just $2625 with a 17-inch monitor. But there's no weekend tech support, and we lack the data to speak for service and reliability. *Data Storage Marketing, 800/543-6098, 303/442-4747* **Reader service no. 791**

IBM PC 330

PROS: Integrated video, beautiful design and construction

CONS: Expensive; limited expandability, no CD-ROM drive

Big Blue demands big green for this quick P-133 desktop. At $3498, it has 16MB of RAM and a 1280MB hard disk, but just a 15-inch monitor and no multimedia. Service and reliability are great, with a three-year warranty and 24-hour tech support. But for this kind of dough, you can buy a P-166 with a big monitor from other reputable vendors. *IBM, 800/772-2227*

Micro Express MicroFlex-86/P150+

PROS: Inexpensive for a P-166–level performer, tons of RAM

CONS: Limited reader data suggests below-average reliability

If we had more and better survey responses on reliability, this loaded Cyrix 6x86-120 minitower would make our chart. It's as fast as a P-166 and has 32MB of EDO RAM, a 1280MB hard disk, and a 15-inch monitor for just $2744. *Micro Express, 800/989-9900, 714/852-1400* **Reader service no. 792**

Micro Express MicroFlex-86/P166+

PROS: Great price for fastest multimedia system we've seen

CONS: Limited reader data suggests below-average reliability

This $3019 minitower outperforms every P-166 we've tested with its Cx6x86-133 CPU and 32MB of RAM. It comes with a 1280MB hard drive, a 4X CD-ROM drive, and top-drawer sound components. If our data showed higher reliability, it would make our chart. *Micro Express, 800/989-9900, 714/852-1400* **Reader service no. 793**

MultiWave Ultra Power P-166

PROS: Reasonable price, good expandability

CONS: So-so 15-inch monitor, one-year warranty at this price

This $2985 P-166 minitower has 16MB of RAM, a 1280MB hard drive, and a 6X CD-ROM drive. But we lack the data to rate reliability. *MultiWave Technology, 800/234-3358, 818/333-8558* **Reader service no. 794**

Packard Bell Platinum Pro

PROS: Lots of software, tons of RAM and storage, 28.8 modem

CONS: Slow, no free SIMM slots, priced with one-year warranty

Notwithstanding its 24MB of RAM, big 2113MB hard disk, and cornucopia of software, we don't recommend this $2998 P-150. Why? Bad performance, poor expandability, and weak service and reliability scores. The $3298 P-166 version of the Platinum Pro fared just as poorly. *Packard Bell, 800/733-5858* **Reader service no. 795**

Quantex QP5/133 M-4

PROS: 6X CD-ROM drive, great software bundle

CONS: Reliability and service still rate below average

With better service and reliability, this $2199 P-133 with 16MB of EDO RAM and a 1275MB hard disk would be on our budget chart. *Quantex Microsystems, 800/896-4898, 908/563-4166* **Reader service no. 796**

Tangent P-166

PROS: Very expandable; integrated speakers, 6X CD-ROM drive

CONS: Not enough fax-back data to rate reliability and service

This quick $3395 compact has high-quality multimedia components, a 17-inch monitor, and a three-year warranty. But it lacks a reader-verified track record on service and reliability. *Tangent Computer, 800/342-9388* **Reader service no. 797**

Tempest 686 SuperMedia 100

PROS: 17-inch monitor, 28.8-kbps modem, good expandability

CONS: Short one-year warranty at this price

Without more reliability data, this fast, nicely set up Cx6x86-100 PC misses our chart. Priced at $2338, it comes with a 1624MB hard disk and 16MB of RAM. *Tempest Computer, 800/818-5163* **Reader service no. 798**

Zenon Dream Media P166

PROS: 17-inch monitor, video card with 4MB of VRAM

CONS: Limited expandability, price includes one-year warranty

Zenon's $3479 P-166 PC has 24MB of RAM and a big 2110MB hard drive, but it posted only average performance scores. Slots are hard to reach through the snarl of cables, and no SIMM sockets are free for RAM upgrades. *Zenon Technology, 800/899-6119, 818/935-1828* **Reader service no. 799**

Notebook Snapshots

These notebooks were tested along with the others but didn't score high enough to reach the Top 20 chart.

Acom Patriot 8000i

PROS: Fast performance, low price, 4X CD-ROM drive

CONS: Cheap-feeling construction, mediocre support policies

This $3400 P-90 is faster than most notes in its CPU class, and it has 16MB of RAM and a 1.3GB hard disk. However, the keyboard and screen hinge feel flimsy, and the passive screen is dull. *Acom, 800/898-2665, 510/353-1600* **Reader service no. 800**

Canon Innova Book 175C

PROS: Excellent software bundle, built-in audio, nice trackball

CONS: Slow; flimsy case, mediocre battery, one-year warranty

This 8-pound 100-MHz Cyrix 486c note is far from fast, but at $1999 it's priced for the masses. The 8MB of RAM and 520MB hard drive are adequate, given the price; a sturdier case and a better 10.3-inch dual-scan screen might have put it on the chart. *Canon Computer Systems, 800/848-4123, 714/438-3000* **Reader service no. 801**

Eurocomm 5400T

PROS: Built-in CD-ROM drive, strong case

CONS: Mediocre keyboard, touchpad interferes with smooth typing, poor battery life, no toll-free tech support

This 9.4-pound, $4300 P-133 notebook is power hungry, sapping its battery in just over an hour. But the 10.3-inch active screen, CD-ROM drive, 16MB of RAM, and 1360MB hard drive are all pluses. *Eurocomm, 613/224-6122* **Reader service no. 802**

IBM ThinkPad 365

PROS: High-quality screen, CD-ROM drive, three-year warranty

CONS: Expensive for a 486 notebook

The $4089 price is too high to place this Cx486-75–based note on our chart. But with 24MB of RAM and a 720MB hard disk, this 8.6-pounder approaches P-75–level speed. The fine 10.3-inch active-

A NEW Generation In Power Protection

UPSTART™

MULTI-POWER SRS

The Ultimate UPS

World's First and Only 5-in-1 Uninterruptible Power Center

1 **POWER BACKUP**
Maintains computer operation during power outages for up to 10 minutes

2 **ELECTRONIC BOOKMARK™**
Automatically saves data with exclusive Save-and-Restore (SRS) software

3 **SURGE SUPPRESSION**
Safeguards your system from power surges

4 **MODEM PROTECTION**
Includes exclusive solid state modem protection

5 **POWER CENTER**
Controls entire system with a master switch

SL WABER®
THE LEADER IN POWER TECHNOLOGY
520 Fellowship Road, Mount Laurel, NJ 08054
1-800-634-1485 or 609-866-8888

Available at COMPUTER City Office DEPOT

Circle 200 on reader service card

FEATURES COMPARISON This Month's Contenders—Notebooks

● = Yes ○ = No

n/a = not applicable

Standard features	Dell Latitude XPi P120ST	Mega Image MegaBook 880	MidWest Micro SoundBook II	Sager P-120	Sharp PC 3020	Toshiba Tecra 700CT	Toshiba Satellite 100CS
Street price as of 4/4/96 [1]	$4300	$2395	$2699	$3150	$1899	$5333	$1999
CPU	Pentium-120	Pentium-90	Pentium-90	Pentium-120	Cyrix 5x86-100	Pentium-120	Pentium-75
Traveling weight (pounds) [2]	7.4	7.4	7	8	7.2	10.4	7.6
Width x depth x height (inches)	11 x 8.5 x 2.1	11 x 8.9 x 2	11 x 8.6 x 2	11.6 x 9.1 x 2.3	8.8 x 11.3 x 2.3	9 x 11.7 x 2.4	9 x 11.8 x 2.3
Installed/maximum RAM (MB)	16/40	16/40	16/40	16/40	8/40	16/48	8/40
Secondary RAM cache Installed/maximum (K)	256/256	256/256	256/256	256/256	0/0	0/0	0/0
Installed/maximum hard disk (MB)	810/810	543/543	720/720	814/1350	500/720	1215/1215	540/540
Removable hard disk	●	○	○	●	●	○	○
Screen type	color active	color active	color dual-scan	color active	color dual-scan	color active	color dual-scan
Viewable screen diagonal (inches)	10.4	10.3	10.3	10.3	10.4	11.3	10.4
Maximum screen colors	65,536	65,536	256	256	256	262,144	256
Simultaneous LCD screen and external monitor	●	●	●	●	●	●	●
Highest resolution of external monitor	1024 x 768	1024 x 768	1024 x 768	800 x 600	640 x 480	1024 x 768	640 x 480
Mouse/keyboard ports	●/● [3]	●/● [3]	●/● [3]	●/● [3]	●/● [3]	●/● [3]	●/● [3]
Cursor keys in Inverted T	●	●	●	●	●	●	●
Dedicated page-control keys	●	●	●	●	●	●	●
All 12 function keys dedicated	●	●	●	●	●	●	●
Standard <Ctrl> and <Alt> layout	○	●	○	○	○	○	○
Built-in pointing device	trackball	trackball	touchpad	touchpad	touchpad	minijoystick	minijoystick
CD-ROM drive speed	n/a	n/a	n/a	4X	n/a	4X	n/a
Fax/data modem speed (kbps)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Docking station available	○	○	○	●	○	●	○ [4]
PC Card slots Type II/III	2/1 [5]	2/1 [5]	2/1 [5]	2/1 [5]	2/1 [5]	2/1 [5]	2/1 [5]
Power management							
Type of battery	lithium ion	NiMH	NiMH	NiMH	NiMH	NiMH	NiMH
Suspend button	●	●	●	●	●	○	○
Suspends when case closed	○	○	○	●	●	○	○
Service and support							
Warranty for parts/labor (years)	3/3	1/1	3/3	1/1	1/1	3/3	3/3
30-day money-back guarantee	●	●	●	●	●	○	○
On-site/replacement service first year price	free	n/a	n/a	n/a	n/a	$50	$50
Repair turnaround policy (days at service center)	2	2	2	4	1	2 [6]	2 [6]
Daily toll-free phone support (hours)	24	12	12	8	24	24	24
Weekend support	●	● [7]	● [7]	○	●	●	●
On-line support sites	AOL, BBS, CIS, Prodigy, WWW	BBS, WWW	BBS, WWW	○	BBS, CIS, WWW	BBS, CIS, WWW	BBS, CIS, WWW
Automated fax support	●	●	●	○	●	●	●

BEST BUY

[1] All notebooks priced as configured with Windows 95, color VGA display, and mouse or other pointing device. Price is direct or based on vendor estimate.

[2] Includes computer, adapter, power cord, and external floppy drive if notebook has one.

[3] Mouse port doubles as keyboard port.

[4] Port replicator available.

[5] Type III slot alternatively accepts two Type II devices.

[6] $50 per year for two-day turnaround.

[7] Saturdays only.

Avery Ready
Index® Dividers

Avery Laser
Business Cards

Avery Laser
Note Cards

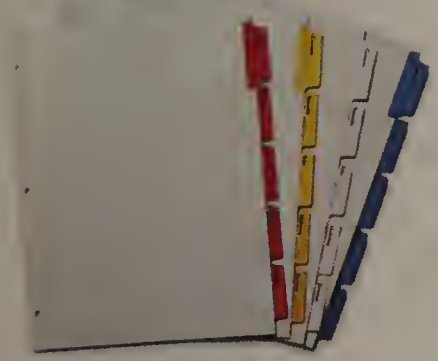
Avery Laser
Videotape Labels

If this is all that's coming out of your printer, look what you're missing.

Avery Laser
Name Badge Labels
and Name Tag Kits

Avery Ink Jet Labels
White and Clear

Avery Laser
Diskette Labels



Avery Index Maker® Dividers
Laser or Ink Jet

Avery Full or Mini-Sheets™ Laser Labels
White and Clear

Avery Laser
File Folder
Labels

It's time you discovered the full line of Avery® products. Products that not only let you make better use of your laser or ink jet printer, they'll help keep you organized and working more efficiently, easily. In fact, Avery formats are already in the software you're using. We'll even send you a free sample kit while supplies last. So give us a call. And start getting more out of your printer.

Circle 31 on reader service card

FOR A FREE SAMPLE KIT, CALL TOLL FREE:

1-888-283-7972 ext. 479

AVERY®

YOU ARE NOW ON

EQUAL

FOOTING WITH THE

LARGEST

NETWORKS

IN THE WORLD.

©1996 Cisco Systems, Inc. All rights reserved.

ciscopro

TAKE A BOW.

Congratulations. You can now get the same quality networking solutions that the world's largest companies have enjoyed for many years.

Introducing CiscoPro,™ a complete suite of internetworking solutions and resources expressly designed for both small and medium-sized businesses. Businesses that are just like yours.

From network access to high-speed LAN switches, CiscoPro products are designed to help you solve any kind of networking problems that may arise. Quickly. Efficiently. And affordably.

Telecommuters can now access your company network. You can now set up virtual offices virtually anywhere. The global resources of the Internet are at your fingertips. All in all, you're totally wired.

And since CiscoPro gives you the latest technology, you can now have all the bandwidth your network needs to send your multimedia presentation down the hall or way across town.

So put the expertise that built the world's most powerful networks to work for you. Call 1-800-778-3632, ext. 174190 for your free copy of *Networking Solutions Made Easy*. Or call your local reseller today.

It's the kind of decision that may earn you a round of applause. So get ready to take a bow.

CISCO SYSTEMS
THE NETWORK WORKS NO EXCUSES.™

From outside the United States, phone Cisco USA 408-526-7209, Cisco Europe 32-2-778-4242 or Cisco Australia 61-2-9935-4107.

Circle 44 on reader service card

matrix color screen and excellent keyboard live up to IBM's consistently high standards. *IBM, 800/772-2227*

Magitronic P120/600 Series

PROS: Fast; CD-ROM drive, fine keyboard, two-year warranty

CONS: Poor manual, screen panel flexes too much

Despite its 16MB of RAM, 1080MB hard disk, active screen, 4X CD-ROM drive, and $3901 price, this 9.6-pound P-120's 1.3-hour battery life keeps it off the chart. *Magitronic, 770/849-0667* **Reader service no. 803**

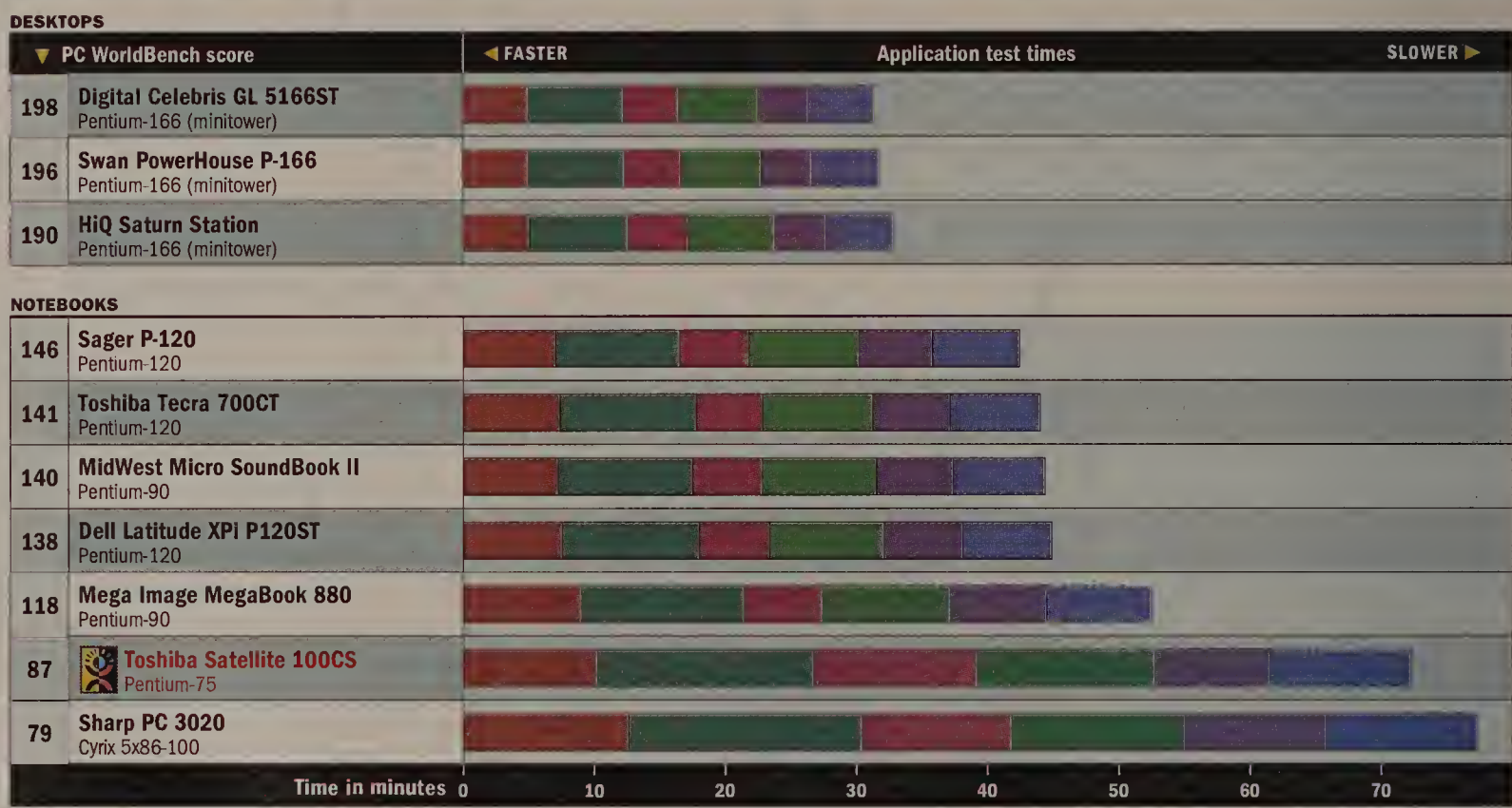
WinBook XP5-P75 NB

PROS: Excellent price, great screen, 14.4-kbps fax-modem

CONS: One-year warranty, below-average reliability scores

The WinBook XP5-P75 NB lacks head-turning features, but this system still nearly made the budget chart. For $2399, you get average Pentium-75 performance, 8MB of RAM, a 540MB hard disk, a vivid 10.3-inch active screen, and 3.5-hour battery life. WinBook even throws in a 14.4-kbps fax-modem. The minimal one-year warranty wouldn't be enough to keep this notebook off our budget chart, for the company gets high service marks from our readers. But without faster performance and more notable features to buoy it, WinBook is dragged down by a low reliability rating. *WinBook, 800/468-2162* **Reader service no. 804**

TEST REPORT This Month's Contenders



BEST BUY

Systems are arranged in order of overall performance from best to worst, based on the normalized, weighted scores from six tests.

Methodology We test each system as supplied by the manufacturer. All tests are performed under Windows 95 configured with an HP LaserJet IV as the default printer. We disable any power-saving features. We set the video resolution to 800 by 600 in 256 colors, using the supplied video driver where possible. We load the test applications and files and the test automation software and scripts.

Word 7.0 for Windows 95 (25 percent of weighting)
We open multiple documents, format text, copy and paste, close files, scroll, and save files. We also change document views, insert text, check spelling, repaginate, count words, print preview, and mail merge.

Excel 7.0 for Windows 95 (20 percent)
Using a variety of worksheets including an automobile statistics sheet, a multisheet federal income tax workbook, a variable-rate mortgage worksheet, and an analysis of life insurance policies, we perform common functions and tasks including opening a file, formatting, data entry, sorting, recalculation, data query, print preview, printing, and saving the file.

Picture Publisher 6.0 for Windows 95 (15 percent)
Using an assortment of graphics, we perform functions including opening and saving files, zooming, scrolling, palette changes, posterization, image masking, hue shifting, feathering, and copying and pasting.

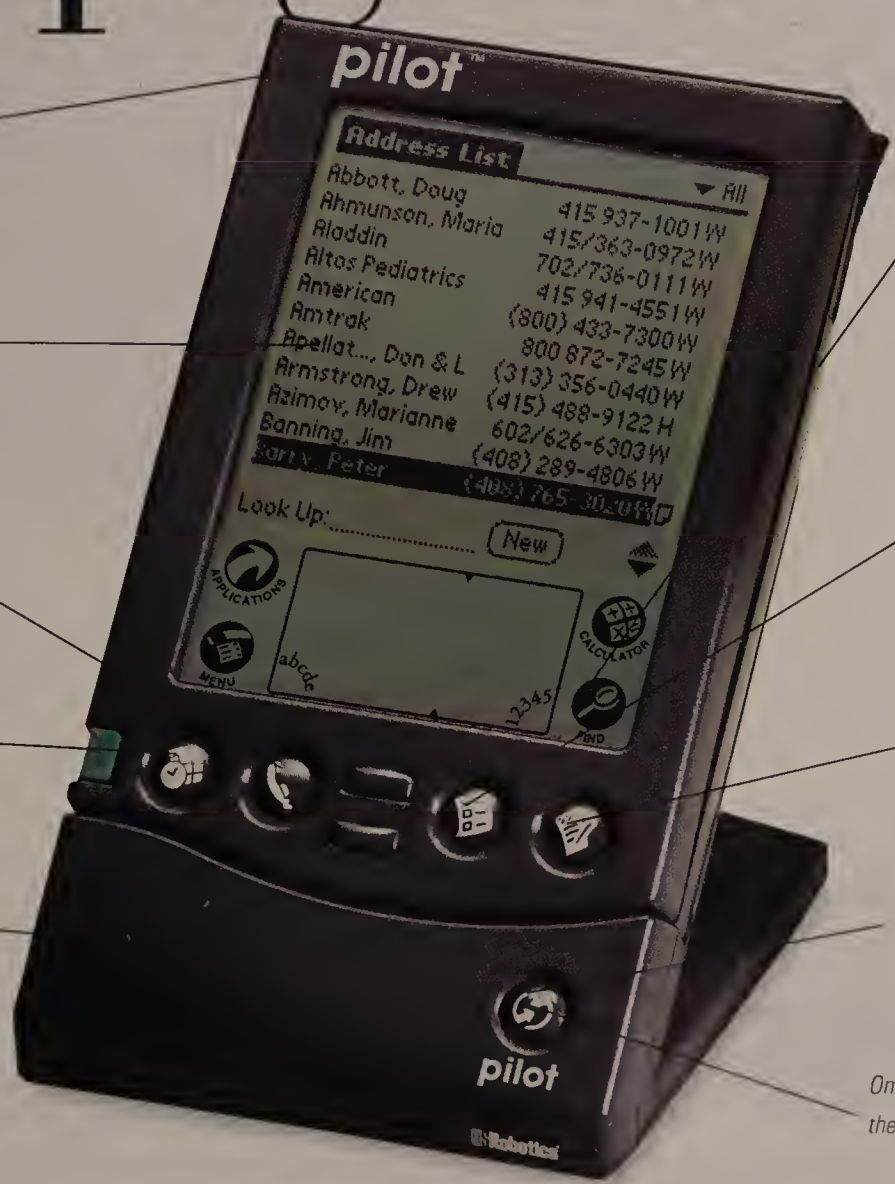
Paradox 5.0 for Windows (15 percent)
We simulate an order entry system. We import tables and post a series of orders, looking up customer and product data in the process. We perform a variety of queries, edit data, and create reports.

WordPerfect 6.1 for Windows (15 percent)
We open different-size files, search for text, change fonts, enter text, save files, and jump to a particular page. We also check spelling, copy and paste, scroll, change document views, and insert one file into another.

1-2-3 release 5 for Windows (10 percent)
Same functions as the Excel test.

Data based on tests designed and conducted by the PC World Test Center.
All rights reserved.

It does more. But this is a one page ad.



Pilot™ is your automatic link to the personal info on your PC.

Pilot includes its own Personal Information Manager software that lets you edit, import and export info to and from your PC.

Pilot stores thousands of addresses, phone and fax numbers, personal notes — you name it.

Touch here to see the day's agenda. Make recurring meetings appear automatically.

Pilot's PIM works with desktop PIMs like Sidekick, Schedule+, Now Up-to-Date and others.

Delete old records from your Pilot, and keep for future reference in an archive file on your PC.

Enter any word and touch "Find" to retrieve a stored item instantly.

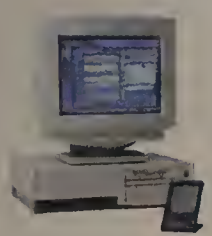
It's easy to add memory, upgrade, or attach products like modems and pagers.

Prepare a To-Do list, prioritizing items by due date. Make items disappear as you complete them.

Take notes on the road, then later drag and drop them into programs like Word or Excel on your PC.

Enter data once into your Pilot or PC. Then press the HotSync™ button to keep your Pilot and PC up-to-date.

One touch automatically keeps the data on your Pilot safe and backed up on your PC.



At about 4.5" tall, 5.5 oz. and at $299,* the new Pilot organizer fits your shirt pocket—and your budget. Yet it's huge on functionality. But instead of telling you all it can do, we think you'd rather try it out yourself. To find out where to get your hands on one, give us a call at 1-800-881-7256. To arrange a demo, visit our web site at http://www.usr.com/palm.

pilot™
The one touch organizer

*The average U.S. street price for PILOT, complete with all desktop PIM software and organizer software, docking cradle and accessories. © 1996 U.S. Robotics, Inc. U.S. Robotics and the U.S. Robotics logo are registered trademarks and Pilot and HotSync are trademarks of U.S. Robotics, Inc. and its subsidiaries. All other product names are registered trademarks or trademarks of their respective owners.

U.S.Robotics
The Intelligent Choice in Internet

Circle 173 on reader service card

INFOWORLD CALLED IT THE FLOPPY OF THE FUTURE.*

***MO.* It's Fujitsu's DynaMO® 230 Magneto-Optical Drive.**

MO. It's the media for the age of multimedia. It's 230 megabytes in a 3.5-inch disk you can drop in your pocket. It's a drive so compact it can slip into the floppy bay in your PC. And at $20 for a disk and under $500 for a drive, it's extremely affordable.

MO. It's faster and smaller than CD-ROM. It's more durable and reliable than removable hard drives. And with the capacity of 160 floppy disks, it solves your data storage problems.

*© 1995 Fujitsu. All rights reserved. DynaMO is a registered trademark of Fujitsu. *InfoWorld 9/11/95.*

YOU CAN CALL IT MO.

Meet MO (shown actual size)

MO. It's perfect for storing and transporting everything from multimedia and graphics files to spreadsheets and engineering drawings. Save large presentations including video. Back up your hard drive. Carry more applications and your working data files. All on a single disk.

MO. It's the future. It's now. And it's from Fujitsu. The world leader in magneto-optical storage and the world's second largest computer company. And 230 megabytes is only the beginning.
For *MO* info call Fujitsu Computer Products of America at 800-898-1455.

FUJITSU

COMPUTERS, COMMUNICATIONS, MICROELECTRONICS

Circle 89 on reader service card

See MO at PCZone 800-258-2088, MacZone 800-248-0800, Power Peripherals, Inc. 800-211-8172, MegaHaus 800-637-4743, Microtech International, Inc. 800-220-9492, Mitsubishi Chemical America 800-347-5724

RELIABILITY AND SERVICE MONITOR

Win an NEC PowerMate P133

Have you ever contacted your PC maker for service and support? Or has your PC been trouble-free? Tell us about it! Fill out and fax in the questionnaire below—even if you have no problems to report, and even if you have responded to this survey before—and we'll enter you in a drawing to win an NEC PowerMate P133, a Best Buy Pentium-133 PC in this month's Top 20.

HOW TO ENTER: FOR BEST RESULTS, PHOTOCOPY THIS PAGE. Fax your completed survey to 415/357-4522. Do NOT fax a cover page. Or mail it to *PC World*, Box 6-SS, c/o 800-SCAN, 543 Howard St., San Francisco, CA 94105-3013. Surveys must be received by June 30.
PRIZE: One entry per person. IDG employees and their families are not eligible. One prize will be awarded through a random drawing. *PC World* will make reasonable efforts to contact winners by telephone and fax. If *PC World* is unable to do so within 30 days of the drawing, a new winner will be selected. No purchase necessary. Void where prohibited by law.
HOW TO FILL OUT THE FORM: Print your name (block capital letters) and your fax number, and fill the circles for each digit of your daytime phone number. Then fill out the questionnaire. AVOID GOING OUTSIDE THE LINES!

LAST, FIRST NAME

FAX NUMBER — —

ZIP CODE

Please fill in your daytime phone number below.

1	○	○	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○	○	○
3	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○
5	○	○	○	○	○	○	○	○	○	○
6	○	○	○	○	○	○	○	○	○	○
7	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○
9	○	○	○	○	○	○	○	○	○	○
0	○	○	○	○	○	○	○	○	○	○

How did you get this copy of *PC World*?
○ By subscription ○ On the newsstand ○ From someone else

ABOUT YOUR PC

Who is the manufacturer of the PC you use most frequently?

○ Acer ○ Acma ○ ALR ○ Apple ○ AST ○ AT&T (NCR) ○ Austin (IPC) ○ Axik ○ Blackship ○ Canon ○ Compaq ○ Compudyne
○ Computrend ○ Comtrade ○ CTX ○ Dell ○ Diamond ○ Digital (DEC) ○ DTK ○ EPS ○ Epson ○ Everex ○ Future Tech ○ Gateway 2000
○ Hewlett-Packard ○ HiQ ○ Hyundai ○ IBM ○ Insight ○ Intelesys ○ Leading Edge ○ Micro Express ○ Micron ○ Midwest Micro ○ MIS ○ Nat'l Micro
○ NEC ○ Netis ○ Packard Bell ○ Panasonic ○ PerComp ○ Pionex ○ Polywell ○ Quantex ○ Robotech ○ Samsung ○ Sharp ○ Swan
○ Tangent ○ Texas Instruments ○ Toshiba ○ Twinhead ○ USA Flex ○ Vektron ○ VTech (Expotech, Laser) ○ WinBook ○ Zenith (ZDS) ○ Zenon ○ Zeos ○ Other

What size is this PC?
○ Desktop ○ Notebook/laptop ○ Handheld

What is the CPU?
○ PowerPC ○ Pentium ○ 80486 ○ 80386 ○ Other

Where did you buy this PC?
○ Local dealer ○ Mail/phone order ○ Direct from field sales force ○ Membership discount store ○ Computer superstore ○ Home electronics store ○ Retail store ○ Value-added reseller ○ Other

After ordering, how long did it take to get your PC?
○ Less than 1 week ○ 1–2 weeks ○ 3–4 weeks ○ More than 4 weeks

Who set up your PC?
○ Dealer/retailer/VAR ○ Staff computer technician ○ Self or coworker

Where do you use this PC? ○ At home/home office ○ At work ○ Both

WHEN YOU FIRST GOT YOUR PC

When did you buy this PC? (Specify month and year.)

○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ June ○ July ○ Aug ○ Sept ○ Oct ○ Nov ○ Dec
○ 91 ○ 92 ○ 93 ○ 94 ○ 95 ○ 96

When you first set up your PC, were any components "dead on arrival" (DOA)?
○ Yes ○ No ○ Don't know

If so, which component was it? (Mark all that apply.)
○ Battery ○ CD-ROM ○ CPU ○ Floppy drive ○ Graphics/video board ○ Hard drive ○ Keyboard ○ Memory ○ Modem/fax board ○ Monitor/screen ○ Motherboard ○ Mouse ○ Power supply ○ Sound board ○ Other

Did your problem occur only after you added your own hardware or software?
○ Yes ○ No ○ Don't know

Would you buy this brand of PC again?
○ Yes ○ No ○ Not sure

How many times have you had a problem with this PC?
○ No problem ever ○ One ○ Two ○ Three ○ Four ○ More than four

If you have had a problem that you have not reported in a previous survey, please fill out the right column. If you are reporting a DOA for the first time, skip to the service section.

NEW PROBLEM REPORT

Please answer for the most recent problem—*other than DOA*—not reported in a previous survey.

When did this problem occur? (Specify month and year.)

○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ June ○ July ○ Aug ○ Sept ○ Oct ○ Nov ○ Dec
○ 91 ○ 92 ○ 93 ○ 94 ○ 95 ○ 96

How long was this after you purchased your PC?
○ Less than 1 month ○ 1–3 months ○ 4–6 months ○ 7–12 months ○ More than 12 months ○ Not sure

Did the problem occur as a result of adding new hardware or software?
○ Yes ○ No ○ Don't know

Did the problem occur under warranty?
○ Yes ○ No ○ Don't know

What was the problem finally identified as? (Mark all that apply.)
○ Faulty component ○ Incorrectly installed software ○ Wrong configuration ○ Faulty peripheral ○ Device conflicts ○ OS problem ○ Other ○ Don't know

If a component failed, which one was it? (Mark all that apply.)
○ Battery ○ CD-ROM ○ CPU ○ Floppy drive ○ Graphics/video board ○ Hard drive ○ Keyboard ○ Memory ○ Modem/fax board ○ Monitor/screen ○ Motherboard ○ Mouse ○ Power supply ○ Sound board ○ Other

SERVICE

Please use this section to describe the service and support you received for the problem reported above or the DOA reported at left.

Who fixed your PC?
○ Manufacturer ○ Dealer/store where purchased ○ Manufacturer's authorized repair technician ○ Self ○ Other

What types of service and support did you receive? (Mark all that apply.)
○ Phone ○ On site ○ In store ○ System swap ○ Component swap ○ Factory return

If you received phone service, how long were you on hold?
○ Not at all ○ Less than 1 minute ○ 1–2 minutes ○ 3–5 minutes ○ 6–10 minutes ○ 11–20 minutes ○ More than 20 minutes

How long did it take before you talked to the person who finally helped you?
○ Less than 15 minutes ○ 15 minutes–1 hour ○ 2–5 hours ○ 6–10 hours ○ 11–24 hours ○ 1½–2 days ○ 3–5 days ○ 1 week or more

How long did it take to resolve the problem completely?
○ 1–2 days ○ 3–7 days ○ 8–14 days ○ 15–30 days ○ More than 1 month ○ Never resolved ○ Awaiting resolution

Was the problem resolved to your satisfaction?
○ Yes ○ No

How would you rate the person(s) who helped you?

	Poor		Good		Excellent
Courtesy	○	○	○	○	○
Knowledge	○	○	○	○	○
Follow-through	○	○	○	○	○

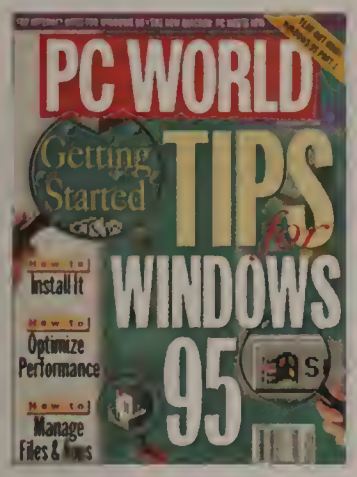
Based on the service and support you received, would you buy this brand of PC again?
○ Yes ○ No

On the whole, how satisfied are you with the service and support you received?
○ Not at all ○ ○ Satisfied ○ ○ Extremely satisfied

PLEASE FAX TO 415/357-4522. FOR BEST RESULTS, PHOTOCOPY THIS PAGE.

PC WORLD SAVINGS VOUCHER

63% OFF



Annual Cover Price	Your One-Year Rate	PLUS Your Free Bonus
$59.40	$21.97	Windows 95 Tips Mouse Pad

☐ **YES. I want to get PC WORLD for less than $1.84 per issue and save 63% off the cover price. Plus, I'll get the exclusive PC WORLD Instant Reference mouse pad—complete with the most helpful tips for working with Windows 95— FREE with my order.**

NAME

COMPANY

ADDRESS

CITY/STATE/ZIP

FREE

Special Bonus: PC WORLD Windows 95 tips mouse pad

Mail this card or
call 800-825-7595 ext. 501—Fax 415-882-0936

Savings based on annual newsstand price of $59.40. Please allow 6 to 8 weeks for delivery of your first issue. Foreign orders add $46 postage. Canadian orders add $20 postage plus 7% GST (R124669680).

4MJE6

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Subscription Department
P.O. Box 51833
Boulder, Colorado 80323-1833

Cyber Business 2000

When Do We Stop Surfing And Learn To Swim?

This 13 part video series based on the 1995 Forrester Technology Management Forum will shed light on how your business can capitalize on the Internet.

The latest technology is quickly changing communication and forcing us to examine the most effective way to manage business relationships as we move closer to the year 2000. Therefore, whether you are a small business owner or the CEO of a Fortune 100 company, this series is your key to unlocking the secrets of Cyber-Business.

The Video Series Includes:

Total of 13 tapes

Run time approximately

50 minutes for each tape

Tapes feature one-on-one interviews, conference presentations and audience questions and answers.

Special Offer

$24.95 per tape

$195 for the series

Series includes interviews with:

Bill Gates
Chairman & CEO, Microsoft

Robert J. Frankenberg
Chairman & CEO, Novell, Inc.

John C. Petrillo
Executive Vice President, AT&T

Jeffrey M. Crowe
President & Co-founder, Edify Corp.

Vinton G. Cerf
Senior Vice President, MCI Corp.

Eckhard Pfeiffer
President & CEO, Compaq Computer Corp.

Marc Andreessen
Vice President & Co-founder, Netscape

And other top business leaders

CALL NOW TO ORDER

1-800-627-9420

MasterCard • VISA • AMEX • Discover

THE DOCUMENT COMPANY
XEROX
Worldwide Sponsor

Open **Shut** **Open** **Shut** **Open** **Shut**

Guess what's different about our new packaging?

Clear Resealable Packages

The advantages of Xerox paper have always been clear. Crisp, sharp images on paper that has tested 99.99% jam-free. But now with our resealable see-through packaging the evidence is stronger than ever. You can see the quality at a glance. The color, the texture, the kind of paper you're choosing. And because the package is resealable, the paper stays fresher longer, ready to make your work look as professional as it deserves. Case open. Case closed. Ask for it where you buy your office supplies.

THE DOCUMENT COMPANY
XEROX

XEROX,® The Document Company,® and the stylized X are trademarks of XEROX CORPORATION. 36 USC 380.

Circle 248 on reader service card

Out With the Old DeskJets, In With the New

Great Color on a Budget
The DeskJet 820Cse is one of HP's slowest color ink jets, but its output quality is the best, and its $389 price is good.

Hewlett-Packard's winning color ink jets just got cheaper. The company's new DeskJet 820Cse and 680C, the number one and number three color printers this month, are less expensive versions of the DeskJet 850C and 660C, which have been discontinued. Meanwhile, Canon has cut the price of its BJC-610 ink jet by $100 (from $569 in April to $469 this month), which propels that printer into the number five slot on the color chart. Canon also knocked $20 off the price of the BJC-4100, the number four printer on our color chart.

Laser Prices Drop, NEC Printer Rises

Price changes on the monochrome chart have also shifted the rankings from last month. Most notably, a $100 price drop on the NEC SuperScript 660 catapulted it from the number four spot to number two. In addition, Texas Instruments dropped the price of its microLaser Win/4 from $449 to $379.

Hewlett-Packard's new DeskJets aren't revolutionary, but they are less expensive than the models they replace. At a street price of $389, the new 600-dots-per-inch DeskJet 820Cse costs $110 less than the DeskJet 850C, yet it retains most of the old model's virtues. On both plain and coated paper, its monochrome print quality is just as crisp and black, and its color is noticeably better, especially for photographs. The DeskJet 820Cse is one of the rare ink jets that let you print on envelopes or letterhead without removing paper from the input tray, and its on-screen help and printed manual are both exceptional. However, as with most GDI printers, you can print in DOS only from within Windows. And in our Windows 95–based tests on a Pentium-90 system with 16MB of RAM, the 820Cse was noticeably slower than the DeskJet 850C and the $399 Epson Stylus

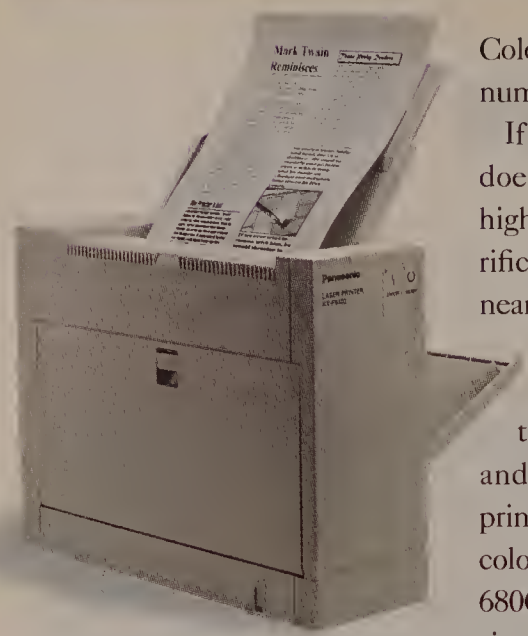
TOP 10 PERSONAL PRINTERS

		Last ranking	Last reviewed	Type	Street price	Overall rating	Print quality: Monochrome	Print quality: Color	Speed rating: Monochrome	Speed rating: Color	Features, ease-of-use rating	Reader service number	Comments
MONOCHROME	1 Panasonic KX-P6100 800/742-8086	1	Apr 96	laser	$399	92	85	–	90	–	76	601	Fast, fine print quality; but limited paper handling.
MONOCHROME	2 NEC SuperScript 660 800/632-4636	4	Apr 96	laser	$399	90	84	–	83	–	77	602	A $100 price drop makes the SuperScript a better value.
MONOCHROME	3 HP LaserJet 5L 800/752-0900	2	Apr 96	laser	$479	87	88	–	80	–	83	603	Excellent print quality, but the slowest laser we've tested.
MONOCHROME	4 Panasonic KX-P6500 800/742-8086	3	Apr 96	laser	$449	86	85	–	84	–	79	604	Terrific print quality, space-efficient tower design.
MONOCHROME	5 TI microLaser Win/4 800/848-3927	5	Apr 96	laser	$379	84	87	–	83	–	69	605	Small, easy to use, $70 price drop. Prints mediocre gray scale.
COLOR	1 HP DeskJet 820Cse 800/752-0900	–	current	ink jet	$389	91	77	90	76	82	88	606	Replaces DeskJet 850C. Slower, but better color print quality.
COLOR	2 Epson Stylus Color II 800/289-3776 ext. 3000	2	Apr 96	ink jet	$399	91	73	80	84	90	85	–	Fastest color printer, $51 price drop, great print quality.
COLOR	3 HP DeskJet 680C 800/752-0900	–	current	ink jet	$309	84	75	80	84	83	86	607	Replaces DeskJet 660C. Faster; better color print quality.
COLOR	4 Canon BJC-4100 800/848-4123	4	Apr 96	ink jet	$329	79	68	74	84	81	86	608	Good output, nice software, price drops $20 this month.
COLOR	5 Canon BJC-610 800/848-4123	–	Apr 96	ink jet	$469	76	77	85	54	56	86	609	Fine print quality, slow printer. $100 price drop.

BEST BUY

Methodology The overall rating includes ratings for print quality (27 percent), price (20 percent), features and ease of use (20 percent), performance (15 percent), service and support (13 percent), and consumables (5 percent). For all ratings, higher is better. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

For more information about all products in this table, circle reader service no. 901.



Low-Cost Tower of Power *For $399, Panasonic's KX-P6100 offers fast performance, fine output quality, and a tower case that fits onto crowded desks.*

Color II, a solid color printer that captures the number two position on this month's chart.

If you can live with output quality that doesn't quite reach the DeskJet 820Cse's high standard, the $309 DeskJet 680C is a terrific bargain. Its monochrome text quality is nearly as good as that of the 820Cse, its bright color output is fine for most business documents, and it was actually faster than the costlier 820Cse in both our color and monochrome tests—in part because it prints at a lower resolution (300 by 300 dpi) in color. Like the DeskJet 820Cse, the DeskJet 680C is very easy to use. It's also similar in design, except that it lacks the 820Cse's low-ink indicator, and its manual slot can handle only envelopes. HP offers a variation on the 680C called the DeskJet 682C. The hardware is identical, but it comes with some bonuses: a variety of special papers, and Mickey and Friends Print Studio, a CD-ROM–based printing utility with Disney-themed graphics that will appeal to kids (as well as to adults who are a little Goofy).

Lexmark Ink Jets: Good Paper Handling

None of the other printers we tested for this issue did well enough to hit the Top 10 chart, though Lexmark's $349 WinWriter 150c and $479 Jetprinter 2070 came close. These two similar color ink jets feature top-notch paper-handling features: Their standard input trays hold 150 sheets of paper (most other ink jets hold 100 pages or less), and a manual slot lets you quickly print on envelopes or letterhead stationery without first removing paper from the main tray. The Lexmarks bundle CorelDraw 4.0 on CD-ROM, a pleasing bonus. Both printers produce respectable output for their price range, but the costlier Jetprinter 2070 is better at printing photographs and other documents that demand subtle colors. However, the Lexmarks' black ink is not as dark and true as that of the new HP DeskJets, and the color inks are also less vibrant in comparison.

Two other HP printers failed to make the chart. The $249 DeskJet 600C is now the company's least expensive ink jet. It's similar to the DeskJet 680C, but it can't hold both a black cartridge and a color one at the same time, so you need to swap cartridges when moving from printing monochrome text pages to color documents. Although its output quality is comparable to that of the DeskJet 680C, both color and monochrome print speeds were far slower.

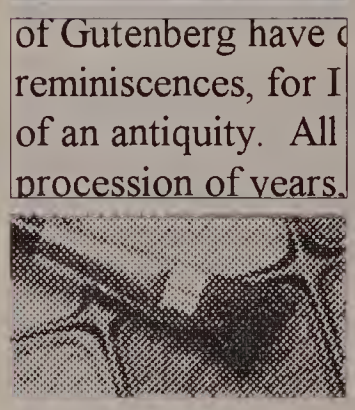
We also tested HP's $899 LaserJet 5P, a high-end personal laser. It offers sharp 600-dpi output and industrial-strength features such as a 250-sheet tray that can hold letter or legal paper, PC and Macintosh compatibility, and an IrDA-compliant infrared port for wireless printing from infrared-equipped notebooks. But the 5P's design is less polished than that of most HP printers. Buttons are marked cryptically (or not at all), the power switch is hard to find, and the power and printer cables plug into odd, recessed compartments with flimsy doors that kept popping off. A final inconvenience: We usually had to remove the toner cartridge before we could clear paper jams.

—Harry McCracken

Testing performed by Ulrike Diehlmann and Dave Casini of the PC World Test Center.

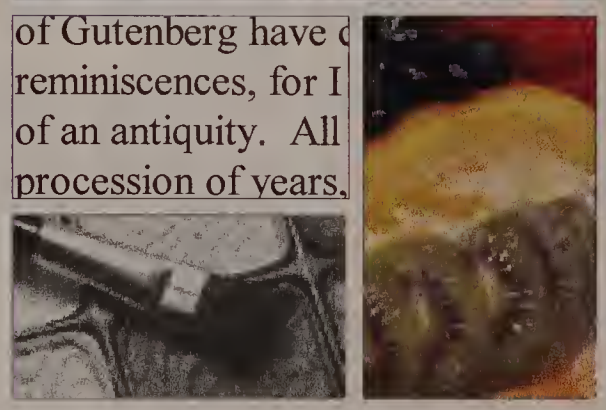
PRINT QUALITY SAMPLES HP Ink Jets' Text Nearly Rivals That of Panasonic Laser Best Buy

Panasonic KX-P6100



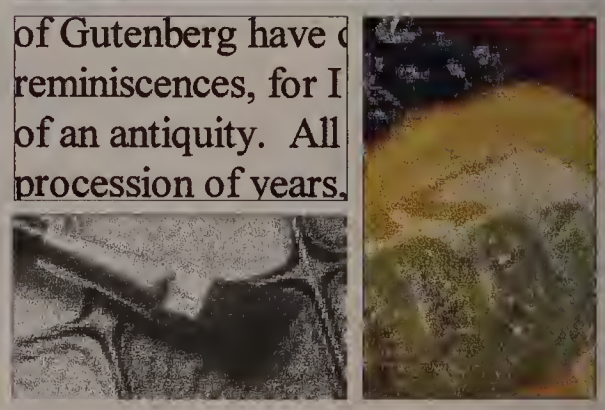
Panasonic's KX-P6100 laser uses smoothing techniques to boost its 300-dpi output to a 600-dpi level of quality.

HP DeskJet 820Cse



The HP DeskJet 820Cse produces crisper text than most ink jets and does a good job with color photos on both plain and coated ink jet paper.

HP DeskJet 680C



The HP DeskJet 680C's text is nearly as sharp as that of the more expensive 820Cse. Color output is pretty good, too, and it all looks fine on both plain and coated paper.

Don Milenko

- E-mails new book draft to publisher.
- Visits Jazz Improvisation Web Site.
- Locates '71 Opel GT parts.
- Moderates Hemingway newsgroup.
- Organizes family reunion.

1-800-NETCOM1

One Call Gets You

Award-Winning NetCruiser® Software

Unlimited Hours of Direct Internet Access

And 24-Hour Live Support

For Just $19.95 A Month

NETCOM

How to Get There.

NetCruisers.
There's one in
every crowd.

You can always tell the people who get more out of the Internet.

They're the ones who spend lots of time there – without spending lots of money.

Because they use NETCOM.

After all, for just $19.95 a month, NETCOM not only gives you unlimited hours of unrestricted Net access – including the World-Wide Web, E-mail, newsgroups and more – we give you the freedom to enjoy it.

Along with everything you need to get to the Net. Including our WinSock-compliant NetCruiser® software. Twenty-four hour live support. And over 200 high-speed local access numbers across the U.S. and Canada.

So see your local retailer or call the leading Internet Service Provider at 1-800-NETCOM1.

You'll see that when it comes to the Net, we make an obvious difference.

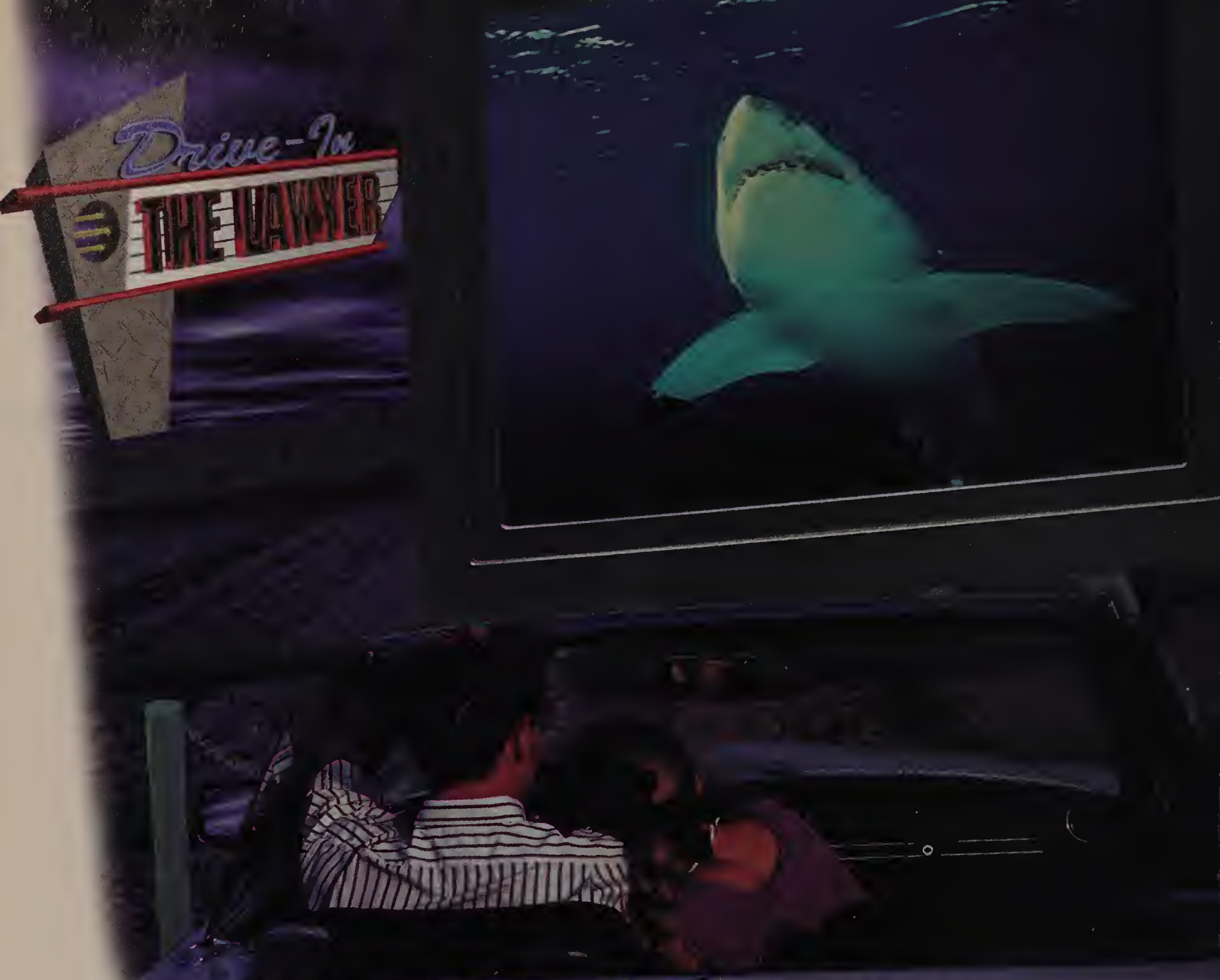
Special Introductory Offer 1-800-NETCOM1

$5 ----► UNLIMITED *access*

$5.00 gets you an entire month of Direct Internet Access.*

© 1996 NETCOM, Inc. NetCruiser is a registered trademark of NETCOM On-Line Communication Services, Inc.
*Introductory offer is one month of service for $5.00. Thereafter, regular service is $19.95 a month for unlimited access. Minimum system requirements for NetCruiser for Windows software: 386 IBM PC-compatible, MS-DOS 5.0, Windows 3.1, 4MB RAM and 4MB of free hard disk space. Credit card required. For more information, e-mail Info@Netcom.com or visit our Web site at http://www.netcom.com.

Circle 126 on reader service card



FAST, FULL-MOTION VIDEO NOW PLAYING AT A SCREEN NEAR YOU!

Grab your popcorn, sit back and get ready for a real blockbuster. STB's POWERGRAPH 64 VIDEO brings dazzling theater-quality performance to your PC. You'll enjoy full-screen playback of video files, blazing frame rates for ultra-smooth viewing, and brilliant color with crystal-clear sharpness.

The POWERGRAPH 64 VIDEO plays all popular video standards, including MPEG, Indeo, Video for Windows, Cinepak, and Video CD/CDi to take full advantage of today's fastest CD-ROM drives. It packs up to 2MB of high-speed EDO DRAM to kick throughput up as much as 30 percent, with up to 16.7 million colors for true-color video playback. An astronomical 160 Hz refresh rate means you'll never see a flickering screen, and resolutions as high as 1600 x 1200 provide the ultimate in image clarity. All from STB, one of the world's largest video card manufacturers.

Check out the POWERGRAPH 64 VIDEO. It's your ticket to big screen thrills!

- **64-BIT graphics engine**
- **1 or 2MB EDO DRAM**
- **Refresh rates up to 160 Hz**
- **Play video files full-screen and full-motion**
- **Resolutions up to 1600 x 1200**
- **Plug-and-Play for easy installation**
- **Limited lifetime warranty**

Suggested Retail from $179 (PCI or VL)

STB Systems, Inc.

COMPUTER City (800) 843-2489 | COMPUSA (800) 266-7872 | ELEK-TEK, Inc. (800) 395-1000 | MICRO CENTER (800) 481-8041 | EGGHEAD SOFTWARE (800) 334-4323

PC WORLD TOP 10 Accelerators | MULTIMEDIA WORLD MEGASTAR | PC WORLD | Designed for Microsoft Windows 95

(214) 234-8750
http://www.stb.com

Copyright 1996 STB Systems, Inc. All Rights Reserved. All trade names referenced are the trademarks, service marks, or registered trademarks of their respective holders. For a copy of the terms of the limited lifetime warranty contact STB at (214)234-8750. Prices and specifications subject to change without notice. Full-motion or full-screen playback frame rate is processor dependent.

Circle 210 on reader service card

High Five Shake-Up: Mitsubishi and NEC Take the Lead

Image Isn't Everything
A mix of high-quality graphics, focused text, extensive on-screen controls, and Plug and Play wins Mitsubishi's low-price Diamond Scan 15HX our top Best Buy.

Five new 15-inch monitors stand our Top 10 chart on its ear this month by besting many older units in screen quality, display controls, or price. Our new top Best Buy, the $424 Mitsubishi Diamond Scan 15HX, offers an above-average display and plenty of on-screen adjustments, from altering contrast and brightness to tweaking color balance. Our only complaint: The adjust buttons and on-screen menu are not well integrated.

Our new number two Best Buy, the pricier $479 NEC MultiSync XV15+, has even better text and graphics. It replaces the MultiSync XV15, our top monitor in April; the main difference is a higher level of Plug and Play. NEC doesn't use on-screen menus or display exact adjustment levels, but changing contrast and brightness is a simple matter of turning a dial, and control panel buttons let you fine-tune a wide range of more advanced settings.

Based on the same Trinitron tube as the Sony Multiscan 15sfII, now ninth, the third-place $468 ArtMedia TX1664 delivers the same good picture, but for $61 less than the Multiscan. Both have intuitive controls: Just touch a button to display the adjustment level. A low $370 price earns the Smile CA1516SL fourth place on our chart. Screen quality is above-average, but hunting down specific controls in the on-screen menu can be a little difficult.

Scores for Panasonic's fifth-place PanaMedia 15 are nearly identical to those of the sixth-place ViewSonic 15GA. Small wonder—they're almost exactly the same monitor. They're both expensive (nearly $500) and graphics quality could be better, but they're the only models here with built-in speakers and microphones. They work fine with business apps, but audiophiles will be disappointed by the sound quality.

TOP 10
15-INCH MONITORS

	Last ranking	First reviewed	Street price	Overall rating	Text quality rating	Graphics quality rating	Features, ease-of-use rating	Dot or stripe pitch (mm)	Max. refresh rate at 800 x 600 (Hz)	Reader service number	Comments
1 **Mitsubishi Diamond Scan 15HX** 800/843-2515	–	current	$424	84	75	73	77	dot 0.28	90	621	Very good display, Level 2b Plug and Play [1], extensive on-screen menu; awkward buttons.
2 **NEC MultiSync XV15+** 800/632-4636	–	current	$479	82	78	81	70	dot 0.28	76	622	Best graphics, very detailed text, Level 2b PnP, okay refresh, easy dials; pricey.
3 **ArtMedia TX1664** 800/278-6334	–	current	$468	82	72	77	77	stripe 0.25	85	623	Very good graphics and text, Level 2b PnP, intuitive controls; faint line across screen.
4 **Smile CA1516SL** 800/876-4532	–	current	$370	81	71	70	63	dot 0.28	90	624	Lowest price, above-average display, Level 2b PnP; confusing on-screen menu.
5 **Panasonic PanaMedia 15** 800/742-8086	–	current	$499	80	73	62	85	dot 0.27	107	625	Very good text, high refresh, Level 2b PnP, speakers and mike; pricey.
6 **ViewSonic 15GA** 800/888-8583	8	Oct 95	$499	80	72	62	85	dot 0.27	108	626	Very good text detail, speakers and mike, Level 2b PnP; expensive despite price drop.
7 **ViewSonic 15G** 800/888-8583	2	Oct 95	$425	80	79	68	63	dot 0.27	90	627	Large 14-inch viewable screen area, sharp spreadsheet detail; okay on-screen menu.
8 **Samsung SyncMaster 15GLI** 800/933-4110	10	Oct 95	$408	79	65	66	70	dot 0.28	100	628	New low price, average display quality, fast refresh; small 13.4-inch viewing area.
9 **Sony Multiscan 15sfII** 800/352-7669	3	Apr 96	$529	79	72	76	74	stripe 0.25	90	629	Very good display, Level 2b PnP, easy on-screen menu; faint line across screen, pricey.
10 **Dell UltraScan 15TX** 800/289-3355	4	Feb 96	$459	79	71	71	70	stripe 0.25	75	630	Above-average display, Level 2b PnP, easy control dials; faint line across screen.

[1] Level 1 Plug and Play sends monitor settings to the graphics card; Level 2b adds a bidirectional capability between graphics card and monitor.

BEST BUY

Methodology We tested the monitors at a resolution of 800 by 600, set at 65,536 colors and a vertical refresh rate of 72 Hz. We used a Pentium-90 PC with 16MB of RAM and a Diamond Stealth64 PCI graphics card with 2MB of DRAM. The overall rating includes ratings for price (30 percent), features and ease of use (25 percent), text and graphics quality (20 percent each), and service and support (5 percent). For all ratings, higher is better. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

For more information about all products in this table, circle reader service no. 903.

If Our 8PleX Specs Don't Impress You, Check Your Pulse.

True 8X

Fast SCSI

Full Screen, Full Motion Video

True Plug & Play Self Configuring SCSI ID

Rugged Brushless Motors

Durable Metal Construction

Low CPU Utilization

115ms Random Access Time

Plextor Manager Utilities

Toll Free Technical Support

The True 8 Speed Professional CD-ROM Drive. Heart-Pumping Performance for Data Searches and Multimedia.

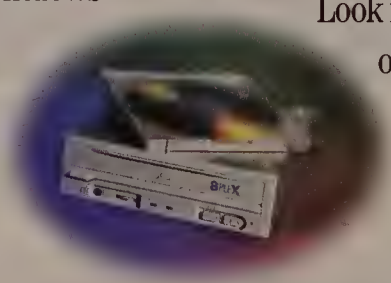
If information is the life-blood of your organization, this drive will be the heart of it. Because the new 8PleX has performance that beats any CD-ROM drive, and quality that will make your heart skip a beat.

To meet the demands of high-volume data searches, intense multimedia, and full-screen video, the 8PleX boasts the world's fastest random access time of 115ms and spins out transfer rates of 1200KB/sec. No other drive is faster. Set-up is faster, too, because the 8PleX offers full plug-and-play compatibility with Windows® 95, and automatic SCSI ID selection.* It also works with all other major operating systems.

The 8PleX comes with our powerful Plextor Manager software that works with any CD format, optimizes digital video, and lets you capture audio to disc. But what makes the 8PleX the ideal drive for mission-critical network applications is our reliability. Every one is built with quality metal construction and our own brushless motors inside.

With so much heart-pumping performance, productivity features and high-quality construction in one package, 8PleX is more than just a drive. It's everything your heart desires.

Look for us at major distributors, your nearest dealer, or for more information call 1-888-675-3986.



PLEXTOR

yes It runs with NetWare

©1996, Plextor Corp. All Rights Reserved. All trademarks or registered trademarks specified are owned by their respective holders.

*Automatic SCSI ID selection requires SCAM capable SCSI controller, available in specially priced 8PleX kits.

Circle 175 on reader service card

Microcom's DeskPortes: Variations on a Winning Theme

Low-Cost Version
Microcom's new DeskPorte 28.8S is a fine alternative to the DeskPorte 28.8P, a Best Buy that adds the option of a parallel port connection.

Looking for a good external modem with the flexibility of serial *and* parallel port connections? The Microcom DeskPorte 28.8P, still our top Best Buy, is your best bet. The $215 28.8P combines above-average throughput and connect rates with comprehensive tech support. If you don't need a parallel port connection, we recommend the 28.8P's near twin, the DeskPorte 28.8S, which we tested this month. At $159, it's the least expensive high-speed modem we've found from a leading vendor. The 28.8S does not appear on the chart because we no longer include multiple similar models from the same vendor.

In other external modem action, Cardinal's MVP288XV moved down the chart due to a policy change. The company still offers a five-year labor warranty, but it now charges a $25 shipping-and-handling fee for each repair after one year. Meanwhile, the chorus of affordable voice-mail modems grows louder. The other three external modems tested this month—Best Data's Smart One 2834VLX ($179), Prometheus's CyberPhone PC288evsp ($199), and USR's Sportster Vi 28.8 ($220)—all let you use your PC as an answering machine. But these three struck a less resonant chord in our testing. They are middling performers at best, with the CyberPhone showing an especially low connect rate at 28.8 kbps.

It's déjà vu all over again for the PC Cards, with no changes to May's lineup. The four units we tested—Apex's Mobile Plus V.34 Cellular Data/Fax Modem ($250), Fujitsu's FM10230 ($230), New Media's 28.8 NetSurfer ($249), and Viking's 28.8 PCMCIA Fax/Data Modem ($249)—were all laggards on the test bench. The New Media and Viking models showed exceptionally poor connect rates at 28.8 kbps.

TOP 10 MODEMS

	Last ranking	First reviewed	Street price external/internal (ISA)	Overall rating	Throughput rating	Connect rating	Features, ease-of-use rating	Reader service number	Comments
DESKTOP									
1 Microcom DeskPorte 28.8P 800/822-8224	1	Apr 96	$215 / –	89	78	90	79	631	Reasonably fast. New low-cost version, the 28.8S, is a good alternative.
2 Motorola ISG Lifestyle 28.8 800/566-3266	2	Mar 96	$200 / $175	89	85	97	69	632	Basic features, but nice price and toll-free support. Connects at 28.8 kbps nearly all the time.
3 U.S. Robotics Sportster V.34 Faxmodem 800/342-5877	3	Nov 95	$219 / $199	88	83	90	78	633	Affordable, excellent performance, manual volume control.
4 Microcom DeskPorte Fast V.34 800/822-8224	5	Nov 95	$391 / –	86	75	90	88	634	Not cheap, but very easy to use. Plain-language display, toll-free tech support.
5 Cardinal Technologies MVP288XV 800/775-0899	4	May 96	$209 / –	85	75	82	78	635	Performance is so-so, but you get voice mail, VoiceView, and cellular support.
PC CARD									
1 Zoom V.34C Model 520 800/631-3116	1	Mar 96	$199	88	74	90	77	636	Installation likely to require support call, but best price and performance on PC Card chart.
2 Microcom TravelCard 28.8P 800/822-8224	2	Feb 96	$274	87	77	80	78	637	Excellent performer comes with toll-free support.
3 MultiTech Systems MultiModem LT 800/328-9717	3	Apr 96	$249	86	68	87	74	638	Alluring price on true Plug and Play unit. High connect reliability, too.
4 Megahertz XJ2288 800/527-8677	4	Feb 96	$309	85	76	69	85	639	Comes with excellent documentation, pop-out phone jack. Great for technophobes.
5 Hayes Optima 288 V.34+Fax for PCMCIA With EZjack 770/840-9200	5	Feb 96	$269	84	79	72	77	640	Low connect rate at 28.8 kbps, but affordable. Now detects calling card tone.

BEST BUY

Methodology We tested each modem using a pair of identical units, one at each end of a simulated public-service telephone network. We tested throughput and connect rates using a variety of file types and line conditions. We tested PC Card installation on a Latitude XPi P75D provided by Dell. We used vendor-supplied initialization strings. The more expensive a modem, the more importance we give price in the unit's overall rating. The overall rating includes ratings for price (3 to 20 percent), features and ease of use (32 to 38 percent), performance (40 to 46 percent), and support (8 to 13 percent). Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

For more information about all products in this table, circle reader service no. 904.

*Estimated selling price for Bravo LC 5100 model 635W. Actual prices may vary. Contact your reseller for details. 1996 AST Research, Inc. AST is a registered trademark of AST Research, Inc. Intel, Pentium and the Intel Inside logo

Okay, Dell®, Compaq® and HP®.
Starting today, it's a whole new ball game.

That high-pitched wail you hear is the sound of our competition screaming. Because inside our new AST Bravo is the latest technology from Intel®, Microsoft®, ATI® and Creative Labs®. Not only is it the most powerful technology you can get, but AST gets it to you way before all those other guys. And now, the all-new Bravo family starts at an incredible $1,250*. You also get the personal sales and support of a reseller as well as AST's round-the-clock support. Sure, it may sound like we're looking for a fight, but you're the one who's going to end up the winner. Call 800-876-4AST for more information, or visit us at http://www.bravo.ast.com.

Bravo MS: Intel 430HX PCIset, Pentium® processors, Pipeline Burst cache, EDO RAM, 64-bit ATI mach 64 VT graphics, synchronous graphics RAM, integrated 16-bit audio.

Bravo LC: Pentium processors, 256 KB second-level cache, EDO RAM, integrated 64-bit PCI-based graphics.

AST® COMPUTER

Where things are HAPPENING™

are registered trademarks and the Pentium processor logo is a trademark of Intel Corporation. All other product or company names are the property of their respective owners. Information and pricing may change without

Circle 6 on reader service card

WAYNE VINCENT

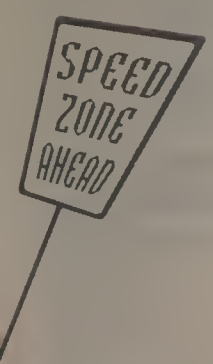
Graphics Boards

Speeding Down Highway 95

Windows 95's business and multimedia applications demand the fastest graphics accelerators. We tested 18 of them; 10 made the grade.

By Brad Grimes

A couple years ago, the most you could expect from a good graphics board was a little help redrawing your screen or scrolling through documents and spreadsheets. But graphics- and video-intensive applications have changed all that. Last year, new graphics board functions made full-motion video look better. This year, vendors are adding improved software and more high-end hardware to their cards to handle the spate of graphical applications that have followed the release of Windows 95. Presentations with MPEG video and 3-D charts, rich multimedia titles, ornate virtual worlds piped over the World Wide Web—they all benefit from the best graphics accelerator you can afford.



You say you only dabble in multimedia? Today's standard graphics boards (now commonly called video boards for their ability to accelerate full-motion video) can still speed up everyday business applications—the fastest cards can give you about a 20 percent boost over the slowest. The difference is that they will also soon be able to handle the most exotic video-intensive applications you might want to take for a spin—for about the same price a standard board cost a year ago.

Windows 95's Direct Route to Multimedia

Virtually every new board on the market has built-in hardware features that speed up full-motion video clips. By the time you read this, many boards will also come with built-in hardware for accelerating 3-D applications like computer-aided design, 3-D presentations, and (don't let the boss catch you) 3-D games.

Unfortunately, many boards don't yet come with the Windows 95 drivers they need to take advantage of these built-in hardware features. Vendors have been waiting for Microsoft to release specifications for DirectX, a series of technologies to help speed up Windows 95 programs. The first of the DirectX series, DirectDraw, speeds up basic 2-D graphics functions, such as screen redraws. A little over half the boards tested here support DirectDraw. Another specification, DirectVideo, switches on your board's built-in video features. Only one board, the Matrox MGA Millennium, supported DirectVideo at the time of our testing. None of the boards had Direct3D, which can speed up 3-D software whether you're using a currently available graphics board or one of a coming crop of specialized 3-D accelerators.

As we went to press, vendors were incorporating the new DirectX technologies as fast as Microsoft could turn them out. If your board's driver doesn't yet support DirectX, you'll still be able to run all the software you want, but certain programs, such as multimedia titles and 3-D applications, will run slowly. In the meantime, keep close tabs on your board vendor's Web site and electronic bulletin board for the latest drivers.

Premiering Windows 95 Accelerator Tests

For this extended Top 10 graphics boards review, which introduces our first tests under Windows 95, we rounded up 18 boards, priced from $156 to $579, and their latest Windows 95 drivers. Twelve of the boards were top performers under our old Windows 3.1–based tests; six are brand-new.

To test how well the boards speed up everyday business software, we used PC WorldBench 1.0, which runs scripts performing common tasks in six different programs. We ran the test suite on a Pentium-133 with 16MB of EDO RAM at 800 by 600 at 16.8 million colors and at 1024 by 768 at 65,536 colors. We report only the PC WorldBench scores at 800 by 600, which ranged from a high of 184 to a low of 149 for the 18 boards, although scores at both resolutions factored into each board's ranking. In general, boards were faster at 1024 by 768 because they could handle the fewer colors more easily. However, their performance relative to each other was largely the same at 1024 by 768 as at 800 by 600.

To evaluate video playback performance, we used Microsoft's Media Player, which comes with Win 95, to produce two sets of results: frame rates for Windows-standard AVI playback, and subjective judgments of MPEG video quality. MPEG is a higher-quality video standard than AVI that normally looks best played with separate hardware. These days boards come with software that uses a Pentium's speed to achieve decent MPEG performance.

Crowning a New Best Buy

As we found in our old Windows 3.*x* testing, the right graphics board can mean the difference between your PC operating at the head of its processor class or trailing far behind. While the gulf between the best and worst PC WorldBench scores was wide, several Top 10 boards huddled together, with the best VRAM- and WRAM-based boards slightly ahead of the best EDO DRAM boards. Where PC WorldBench scores span a range of only about 10 points, you're unlikely to notice a performance difference in business applications. The best VRAM and WRAM boards, though, will prove faster if you use more graphical applications than are in our test suite, such as desktop publishing and image editing programs.

Best Buys

The $329 Matrox MGA Millennium tops our list, with the $209 STB Powergraph 64 Video close on its heels.

Video results are hard to analyze at this time because Microsoft's DirectVideo technology was not widespread during testing. Without DirectVideo, boards can't speed up AVI playback. Therefore, frame rates were low all around (8 to 10 frames per second), leading to jerky video playback. None of the MPEG players in this roundup supported DirectX, but some were definitely better than others: Diamond's Mediamatics MPEG player delivered the best playback.

The top board for both everyday business applications and video playback is the Best Buy Matrox MGA Millennium, a fast, albeit expensive ($329) board that features built-in 3-D acceleration. Its PC WorldBench scores were consistently higher than all other boards' across different resolutions and color depths, and its AVI playback performance was nearly perfect (29 fps) thanks to the fact that it supports DirectVideo.

The Best (and Worst) of the Rest

If all you run are straightforward business applications and some multimedia programs, you can afford to give up a little performance in favor of low price. Today's price/performance leaders are based on the S3 Trio64V+ controller and EDO DRAM. Three of the Top 10 boards use this combination: our other Best Buy, STB's $209 Powergraph 64 Video; the $179 Hercules Terminator 64/Video; and the $197 Diamond Stealth64 Video 2201XL.

Half of the six never-before-reviewed boards we tested this month also use the S3 Trio64V+ design: the miroVideo 22SD, the Number Nine 9FX Motion331, and the VideoLogic GrafixStar 400. But for different reasons, none of the three were able to make the chart (see "Graphics Board Snapshots"). The only new board to make the Top 10 is the ATI Video Xpression. Because this board currently uses plain DRAM, its PC WorldBench scores were merely average (according to ATI, future versions will use faster memory), but it's one of only two boards in this review (the other is the Hercules Stingray 64/Video) to include bilinear interpolation, a feature that makes video look smoother. Unfortunately, because ATI hadn't shipped DirectVideo drivers, the board couldn't do any interpolation under Windows 95. If you still use Windows 3.*x*, however, the Video Xpression will give you good video quality.

Windows 95 has meant trouble for Diamond Multimedia. The company whose VRAM-based Stealth64 Video 3200 had topped our chart since last September took a long time to release new Windows 95 drivers, and when it did, the drivers were slow. After being one of the fastest boards under Windows 3.*x*, the Stealth64 Video 3200 with Diamond's new GT Display Drivers and InControl Tools 95 was the slowest board we tested. The GT drivers weren't yet compatible with the fifth-ranked Stealth64 Video 2201XL, so we tested that board with its old Win 95 driver. Ironically, it was among the fastest EDO DRAM boards. Diamond is working to fix the GT problem. In the meantime, we suggest you stick with the Diamond driver that comes with Windows 95. The Video 3200 performs much better with its old Win 95 driver.

Plug and Play Makes Perfect?

Like most other hardware, video boards are supposed to be easier to use under Windows 95 than under Windows 3.*x*. If the board you buy was available around the time Windows 95 was released and its driver shipped on the CD-ROM, then Windows 95 should automatically recognize the board and load the proper driver.

For newer boards, installation is also easy, but it's not the hands-off method of true Plug and Play. Because a new board's driver wasn't around when Win 95 shipped, you have to install it yourself. During setup, put the disk with your board's drivers in your PC and choose Have Disk when asked to specify your video board.

A good set of software utilities is also key to making a board easy to use. Of the boards we looked at, the number ten GrafixStar 700 has the best set of utilities—VideoLogic's SmartTools 95. These

TOP 10 GRAPHICS BOARDS

Last ranking		Street price	Overall rating	PC WorldBench score at 800 x 600	AVI playback at 2X (frames per second)	MPEG video playback quality at 2X	Max. refresh rate at 1024 x 768 (Hz)	Chip/Installed RAM (MB)/type	Reader service number	Comments
1	**Matrox MGA Millennium** 800/361-1408	5	$329	90	184	29	poor	120	MGA-2064W/ 2/WRAM	610	Fastest Win 95 board we've tested; 3-D is a bonus; DirectVideo support.
2	**STB Powergraph 64 Video** 800/234-4334	2	$209	87	175	10	good	120	S3 Trio64V+/ 2/EDO DRAM	611	Low-cost performer; handles video well without DirectVideo; strong support.
3	**Hercules Terminator 64/Video** 800/532-0600	8	$179	86	172	8	good	90	S3 Trio64V+/ 2/EDO DRAM	612	Low-cost board, extensive utilities; performance is fine for everyday use.
4	**Hercules Terminator Professional** 800/532-0600	4	$279	84	178	10	good	120	S3 Vision968/ 2/VRAM	613	Good for graphics professionals (who might opt for an extra 2MB of memory).
5	**Diamond Stealth64 Video 2201XL** 800/468-5846	3	$197	83	176	9	excellent	100	S3 Trio64V+/ 2/EDO DRAM	614	New Win 95 drivers weren't ready, but old ones worked fine.
6	**STB Velocity 64 Video** 800/234-4334	7	$279	82	176	10	good	120	S3 Vision968/ 2/VRAM	615	Nearly identical to Terminator Pro; good Win 95 software, strong support.
7	**Hercules Stingray 64/Video** 800/532-0600	11	$189	81	173	9	good	75	Ark2000PV/ 2/EDO DRAM	616	Inexpensive; Win 95 utilities to come; shorter warranty than other Herc boards.
8	**Number Nine 9FX Motion771** 800/438-6463	10	$279	81	177	10	poor	150	S3 Vision968/ 2/VRAM	617	Decent but unspectacular speed for VRAM board; good utilities.
9	**ATI Video Xpression** 905/882-2600 ext. 1	–	$199	81	174	8	excellent	120	ATI-264VT/ 2/DRAM	618	Well built; slow at 1024 by 768; good images, but choppy AVI playback.
10	**VideoLogic GrafixStar 700** 800/578-5644	6	$249	80	173	10	poor	100	S3 Vision968/ 2/VRAM	619	Good price, sluggish for VRAM board; great software and documentation.

BEST BUY

Methodology We tested boards with PC WorldBench 1.0 at 800 by 600 resolution at 16.8 million colors (reported here) and at 1024 by 768 at 65,536 colors. We tested AVI video playback at 800 by 600 at 16.8 million colors using Microsoft's Media Player and an MCI command string that reports dropped frames. The clip was compressed at 320 by 240 at 16.8 million colors using Indeo 4.1. We played the clip at its native resolution and at twice its native resolution (2X). We rated MPEG playback quality using the software player bundled with each board and compared quality to that of a hardware MPEG playback card. The overall rating includes ratings for performance (40 percent), features (30 percent), price (20 percent), and support (10 percent). For all ratings, higher is better. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

Windows 95–certified Plug and Play.

For more information about all products in this table, circle reader service no. 902.

utilities attach themselves to the Windows 95 Display Properties box and include all the elements we consider important.

The Future Is Now

As you read this, affordable 3-D accelerators from leading vendors are making their way into PCs, and software that takes advantage of Direct3D is also coming. These boards will cost slightly more, but they will enhance your PC significantly. As these products are released, we'll test their performance in business and video applications, and soon we'll begin testing their 3-D functionality.

Windows 95 is spurring a lot of change in a short amount of time. When all the pieces are in place, your graphics board will play a leading role in turning your PC into a fast multimedia machine.

Brad Grimes is an associate editor for PC World. *He can be reached on PC World Online (see page 14 for contact information). Testing by Mike Salayko of the PC World Test Center.*

For more information about all products in this article, circle reader service no. 905.

Matrox MGA Millennium

Last Windows 3.1 ranking: 5

PROS: Fastest board we've tested, DirectVideo, 3-D hardware acceleration

CONS: Expensive, poor MPEG playback by software

Though it's about $90 more than the average price for a Top 10 board, you can't do better than the $329 Matrox MGA Millennium. Its high PC WorldBench scores make it the fastest Windows 95 board we've tested. It's also the only mainstream board with hardware features that accelerate 3-D rendering. Several desktop PC vendors, including Gateway 2000 and Hewlett-Packard, have adopted versions of Matrox's unique board.

Matrox was the first vendor to support DirectVideo in addition to DirectDraw. True to its promise, DirectVideo improves playback dramatically when you enlarge the video window. The Millennium achieved nearly 30 frames per second when playing AVI files at twice their native resolution. However, MPEG playback was choppy and image quality poor. The board's full set of Win 95 software utilities can be accessed from the Display Properties box. It comes with Asymetrix 3D/FX, a 3-D graphics package, and Papyrus's NASCAR game, so you can get an idea of its 3-D capabilities.

FEATURES COMPARISON How the Top 10 Graphics Boards Stack Up

● = Yes ○ = No

Standard features	ATI Video Xpression	Diamond Stealth64 Video 2201XL	Hercules Stingray 64/Video	Hercules Terminator 64/Video	Hercules Terminator Professional	Matrox MGA Millennium (BEST BUY)
Street price	$199	$197	$189	$179	$279	$329
VESA local bus version available	○	○	○	○	●	○
Installed/maximum RAM (MB)	2/2	2/2	2/2	2/2	2/4	2/8
RAM type	DRAM	EDO DRAM	EDO DRAM	EDO DRAM	VRAM	WRAM
Graphics chip	ATI-264VT	S3 Trio64V+	Ark2000PV	S3 Trio64V+	S3 Vision968	MGA-2064W
Hardware-based video acceleration	●	●	●	●	●	●
Hardware-based 3-D acceleration	○	○	○	○	○	●
Maximum refresh rate at 800 x 600 (Hz)	120	120	90	120	150	200
Maximum refresh rate at 1024 x 768 (Hz)	120	100	75	90	120	120
Software utilities						
On-the-fly resolution switching	●	●[1]	●	●	●	●
Virtual desktop	●	●[1]	●	●	●	●
Zoom	○	●[1]	●	●	●	●
Refresh rate selection utility	●	●[1]	●	●	●	●
Bundled MPEG player	ATI Video Player	Mediamatics	XingMPEG	XingMPEG	XingMPEG	CompCore
DirectDraw/DirectVideo support	●/○	●/○	●/○	●/○	●/○	●/●
Support						
Warranty (years)	5	5	2	5	5	3
Weekday technical support (hours)/toll free	10/○	14[2]/○	12/●	12/●	12/●	9.5/○
BBS number	905/764-9404	408/325-7175	510/623-7449	510/623-7449	510/623-7449	514/685-6008
Web address	http://www .atitech.ca	http://www .diamondmm.com	http://www .hercules.com	http://www .hercules.com	http://www .hercules.com	http://www .matrox.com

[1] Windows 3.1 only; Windows 95 version on the way. [2] 8 hours on Saturday. [3] 8 hours on Wednesday.

PC WORLD SAVINGS VOUCHER

☐ **YES!**. I want to get PC WORLD for less than $1.84 per issue and save 63% off the cover price. Plus, I'll get the All New PC WORLD Instant Reference mouse pad — complete with the most helpful tips for working with Windows 95 right on it — FREE with my order.

NAME _____

COMPANY _____

ADDRESS _____

CITY/STATE/ZIP _____

Savings based an annual newsstand price af $59.40. Please allaw 6 to 8 weeks for delivery af your first issue. Fareign arders add $46 pastage. Canadian and Mexican orders add $20 postage.

4MH83

IMPORTANT: Return this voucher to start your subscription and receive a FREE BONUS!

ANNUAL COVER PRICE
$59.40

YOUR ONE-YEAR RATE
$21.97

YOUR FREE BONUS
WINDOWS 95 TIPS MOUSE PAD

MAIL THIS CARD OR CALL 800-825-7595 ext. 501 — FAX 415-882-0936

Please Accept Your FREE GIFT!

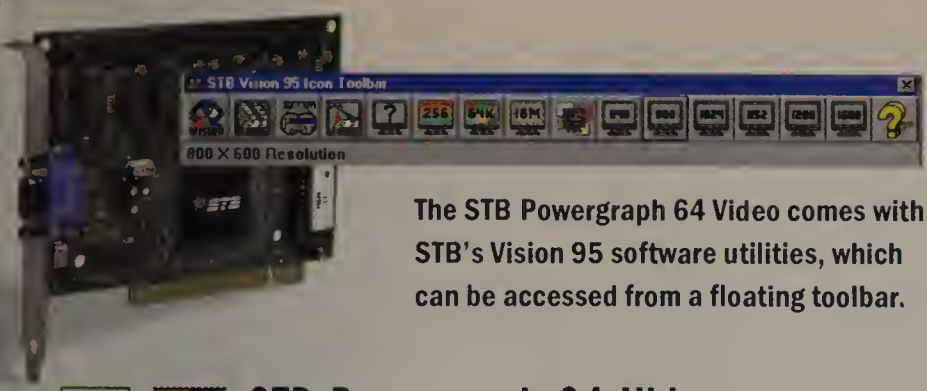
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Subscription Department
P.O. Box 51833
Boulder, Colorado 80323-1833



The STB Powergraph 64 Video comes with STB's Vision 95 software utilities, which can be accessed from a floating toolbar.

2 STB Powergraph 64 Video

Last Windows 3.1 ranking: 2

PROS: Good performance for the price, nice software utilities, lifetime warranty, toll-free support

CONS: Installation can be confusing

The $209 Powergraph 64 Video is showing up in more and more of our Top 20 desktop systems, including Gateway 2000 and Quantex PCs. It's a strong if not stellar performer based on the same upgradable design as that found on the Diamond Stealth64 Video 2201XL and several other boards in this roundup. With its EDO DRAM and DirectDraw support, the Best Buy Powergraph 64 Video turned in good PC WorldBench scores. Without DirectVideo, though, it dropped more than half the frames in our AVI video clip when the clip was scaled to twice the normal size. Playback using Xing's MPEG player was good.

Installation under Windows 95 is less intuitive than it should be. When you follow the directions in STB's manual, you find the Powergraph 64 Video is not one of your choices during setup. Confused users may choose 'Powergraph 64' during installation, but it's not the same card. Instead, you need to click on 'show all compatible devices' to find the Powergraph 64 Video. STB's Vision 95 software is full-featured and accessible from both the Display Properties box and a toolbar. But the default installation doesn't create a program group or a Vision 95 icon, so if you accidentally close the program, you must search for and run the executable file.

One important note: STB really stands behind its boards. Not only does it offer toll-free support (Hercules is the only other Top 10 vendor to do so), but it also backs the Powergraph 64 Video with a lifetime warranty.

3 Hercules Terminator 64/Video

Last Windows 3.1 ranking: 8

PROS: Low price, unique software utilities, DirectDraw, toll-free support

CONS: Weak documentation, can't run utilities from Display Properties box

The $179 Terminator 64/Video fared better in our PC WorldBench test suite than it did in our old Windows 3.*x* tests, which is to say it's still not the fastest board in the Top 10, but it's not as slow as it was under Win 3.*x*. What the Terminator 64/Video lacks in blazing speed it makes up for in low price, unique software utilities, and toll-free phone support. You won't use this board for running high-end graphics applications, but if you need a strong, affordable board for everyday use and basic multimedia, it fits the bill.

The Windows 95 installation is simple, unlike the cumbersome DOS-based installation of the board's Windows 3.*x* drivers. Hercules's Touch 95 software utilities include a refresh rate meter, plus a bunch of extras, like a program for playing audio and video, an Internet browser, and Hercules's own Speedy 95 benchmark tests for gauging your board's performance. Unfortunately, the utilities don't run from Windows 95's Display Properties box as several other boards' utilities do. During testing, no Hercules board sup-

BEST BUY

Number Nine 9FX Motion771	STB Powergraph 64 Video	STB Velocity 64 Video	VideoLogic GrafixStar 700
$279	$209	$279	$249
●	●	●	●
2/4	2/2	2/4	2/4
VRAM	EDO DRAM	VRAM	VRAM
S3 Vision968	S3 Trio64V+	S3 Vision968	S3 Vision968
●	●	●	●
○	○	○	○
150	140	160	120
150	120	120	100
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
XingMPEG	XingMPEG	XingMPEG	XingMPEG
○/○	●/○	○/○	○/○
5	lifetime	lifetime	5
10/○	10 3/●	10 3/●	8.5/○
617/862-7502	214/437-9615	214/437-9615	415/875-7748
http://www .nine.com	http://www .stb.com	http://www .stb.com	http://www .videologic.com

The Hercules Entertainment Center gives you one-stop access to your audio and video files.

ported DirectVideo, so AVI playback was jerky all around. On the other hand, MPEG playback was smooth. While Hercules offers good toll-free tech support, its documentation is weak.

4 Hercules Terminator Professional

Last Windows 3.1 ranking: 4

PROS: Fast, support for high refresh rates, good utilities, DirectDraw

CONS: Poor documentation, can't run utilities from Display Properties box

The $279 Terminator Professional is the Terminator 64/Video's more powerful, more expensive, VRAM-based sibling. Its PC WorldBench scores were second only to the Matrox MGA Millennium's. With DirectDraw support and a combination of fast memory and a high-speed digital-to-analog converter (the part that takes computer data and makes it viewable on a monitor), the Terminator Professional is perfect for high-resolution graphics at fast, rock-steady refresh rates.

5 Diamond Stealth64 Video 2201XL

Last Windows 3.1 ranking: 3

PROS: Excellent MPEG playback, strong performance, DirectDraw, Saturday support

CONS: No Windows 95 utilities, tough to get through to tech support

As we put the finishing touches on this review, Diamond was still having problems moving to Windows 95—drivers were late or incompatible, and utilities were missing. The $197 Stealth64 Video 2201XL felt the full brunt of the confusion but performed well enough to make the Top 10.

There are two Win 95 drivers you can use with this board: Diamond's version of the S3 Trio64V+ driver, and Diamond's new GT Display Drivers for Windows 95. During testing, the GT drivers were not compatible with the Stealth64 Video 2201XL's MPEG and TV tuner add-ons, so the company was still shipping optimized S3 drivers. In an odd twist of fate, this was fortuitous. The Stealth64 Video 2201XL turned in good PC WorldBench scores using the old Win 95 driver, while the Stealth64 Video 3200 with its new GT driver trailed all other boards we tested (see "Graphics Board Snapshots").

The lack of GT drivers turned out to be a plus, but the lack of Windows 95 software utilities is a big minus. Diamond's InControl Tools 95, a set of easy-to-use utilities that can be accessed via the right mouse button, accompanies the sluggish Stealth64 Video 3200 but was not yet included with the 2201XL—there were no Win 95 utilities at all. To the board's credit, installation is simple—the 2201XL and your monitor automatically sync to the highest refresh rate that both support. Diamond is the only vendor here that offers phone support on weekends (Saturdays only), but hold times are usually long.

6 STB Velocity 64 Video

Last Windows 3.1 ranking: 7

PROS: Smooth installation, lifetime warranty; displays crisp, bright colors

CONS: No OS/2 driver, no DirectDraw

When using the $279 Velocity 64 Video, we found that the colors it displayed were the brightest, most pleasing of any board we tested. It's a good product, especially if you use more graphics programs, like CorelDraw, than straightforward business programs. Its installation is easier than that of the STB Powergraph 64 Video, and it uses the same robust Vision 95 utilities. Both AVI and MPEG results mirrored those of the Powergraph 64 Video.

The Velocity's Windows 95 driver has yet to incorporate DirectDraw support, something that should be fixed by the time you read this. STB's lifetime warranty and toll-free support are real pluses. We've seen the Velocity in several systems from Micro Express. With 4MB of VRAM, it sells for around $419.

7 Hercules Stingray 64/Video

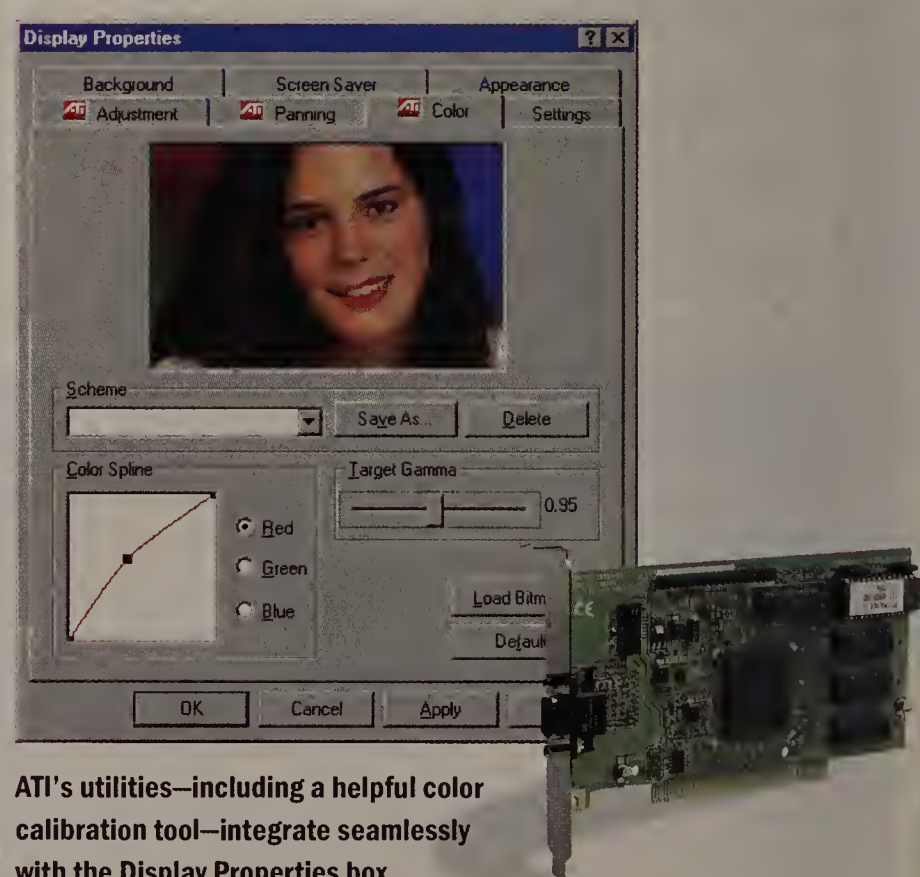
Last Windows 3.1 ranking: 11

PROS: Inexpensive, bilinear interpolation, DirectDraw, toll-free support

CONS: Doesn't support high refresh rates, has poor documentation

The $189 Stingray 64/Video is a solid choice for people who want good performance but don't want to spend a lot of money. It does not support high refresh rates as the other Top 10 boards do, but its performance across Windows 3.*x* and Windows 95 is strong and its software utilities are very useful.

The Stingray is the only board here besides the ATI Video Xpression that supports bilinear interpolation. This means video clips look less blocky when you enlarge them. There's no DirectVideo support yet, though, so you won't immediately see the benefits under Windows 95. Unfortunately, the board's IC Works ZoomDAC video accelerator doesn't perform color space conversion, the process by which digital video is converted to the color format required by PC monitors. As a result, the CPU has to work harder and video clips drop more frames at higher resolutions. The board doesn't offer the Touch 95 utilities found with the Terminator family, but the included 16-bit utilities are robust.



ATI's utilities—including a helpful color calibration tool—integrate seamlessly with the Display Properties box.

A Serious Monitor for Serious Users

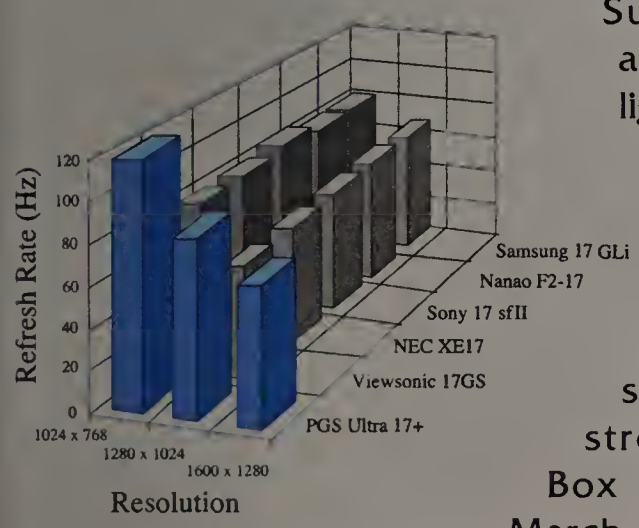
Ultra 17+

Performance By The Numbers: 135MHz & 82KHz
You need a monitor that moves fast. Your applications require the ultra-high 135MHz bandwidth and the super-fast 82KHz horizontal frequency of the new Princeton Graphic Systems' Ultra 17+. Only such a monitor is capable of reaching refresh rates that won't give you headaches.

Getting The Maximum Resolutions
The Ultra 17+'s 82KHz frequency allows you to maximize your system to run at 1280 x 1024 @ 75Hz for flicker-free viewing. In addition, we've loaded in advanced features such as PreVu℠, Coloright℠ Technology, and VESA® DDC 1/2b Plug and Play. Best of all, the Ultra 17+'s MSRP is just $729. Only Princeton makes such a high degree of performance so easily affordable.

FEATURE	PGS ULTRA 17+	NEC Multisync XE17	Sony Multiscan 17sfII	ViewSonic 17GS	Nanao F2-17	Samsung 17GLi
Super-Fast 82KHz Horizontal Frequency	Yes	No	No	No	No	No
Ultra-High 135MHz Bandwidth	Yes	No	No	No	No	No
MSRP (ESP)	$729	($1,028)	$1,099	$749	$1,099	$869

Award Winning Monitor
The comparison chart reveals why you are way ahead with the Ultra 17+. But if you'd prefer an impartial evaluation, see the April 1996 Top 100-Home PC Editors' Choice Awards. "If working at very high screen resolutions...is a must, so is this monitor. Superior color and balanced lighting...elevate this monitor a notch above the rest." In addition, the Ultra 17+ also scored a very strong WinMag Box Score in the March 1996 issue of Windows Magazine which labeled it "a sensible choice for state-of-the-art corporate warriors as well as ambitious homebodies."



Here Today...Gone Today!
If you use Windows™ 95, QuarkXPress™, PowerPoint™, AutoCAD™ or Excel™, then you owe it to yourself to purchase the ultimate monitor - the Ultra 17+. See what we mean, visit your local PGS dealer today. But don't wait too long - because at an MSRP of **only $729**, the Ultra 17+ is not going to be in stock for long!

1996 EDITORS' CHOICE HOMEPC TOP 100 HARDWARE

15" Catagory
Winner - PGS EO15
Winner - PGS Ultra 15

17" Catagory
Winner - PGS Ultra 17+

PRINCETON®
GRAPHIC SYSTEMS
800/747-6249 Ext. 182

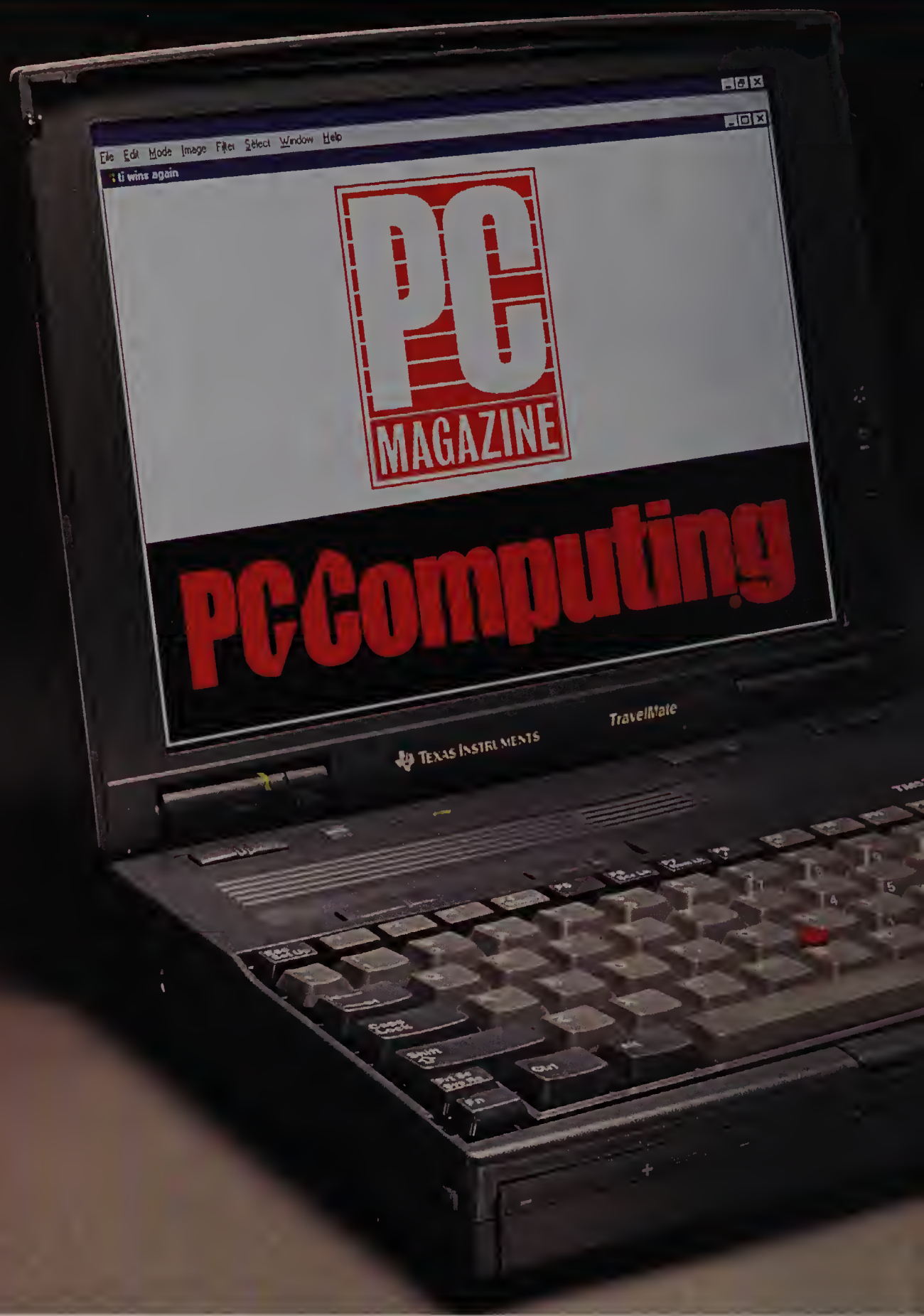
© 1996 Princeton Graphic Systems. All rights reserved. The following are trademarks of their respective companies: Multiscan of Sony, MultiSync of NEC Technologies, Inc.; Windows, PowerPoint and Excel of Microsoft Inc., QuarkXPress of Quark Inc., All other trademarks are the properties of their respective owners. As an Energy Star™ Partner, Princeton Graphic Systems has determined that this product meets Energy Star™ Guidelines for energy efficiency. Prices and specifications based on information provided by the manufacturers as of 4/10/96. For information, please write us at 2801 S. Yale St. Sta.110, Santa Ana, CA 92704 800/747-6249, 714/751-8405; FAX: 714/751-5736; Fax-On-Demand: 714/751-0188 (available 04/30/96); Home Page www.prgr.com (available 04/30/96).

Circle 151 on reader service card

BEFORE YOU BUY, GET

TravelMate 5000 Series

- 133MHz Pentium® processor with PCI bus and 256KB L2 Cache (120MHz and 90MHz also available)
- Brilliant SVGA TFT or VGA TFT Screens*
- 2MB Video memory
- 8MB RAM, upgradeable to 32MB
- Hard Disk Drive: 1.2GB
- Two Lithium ion batteries
- Built-in 16-bit sound, internal speaker and dual mode microphone
- Serial infrared port for wireless connectivity
- Windows® 95 and Windows for Workgroups pre-installed



*Depending on model. TravelMate, DockMate and "Start Doing Extraordinary Things" are trademarks of Texas Instruments. Pentium and the Intel Inside logo are registered trademarks of Intel Corp. Microsoft,

PLENTY OF QUOTES.

"The true standout is Texas Instruments' TravelMate 5000..."
PC Magazine, August 1995

"The TI TravelMate 5000 will shatter any notion you may have about notebooks being too underpowered to compete..."
PC Magazine, August 1995

"...all the way around, the TravelMate 5000 makes a top-notch desktop replacement."
PC Computing, August 1995

The performance of the TravelMate™ 5000 family has got people talking. And no wonder. Take our new, 133MHz TravelMate 5300. It comes with the maximized Pentium technology that is only possible from full PCI bus architecture. Its battery life is amazing, even handling the tough jobs like multi-tasking. The hard drive is an awesome 1.2GB. The video RAM is a full 2MB for enhanced performance, instead of just 1MB like most competitors'.

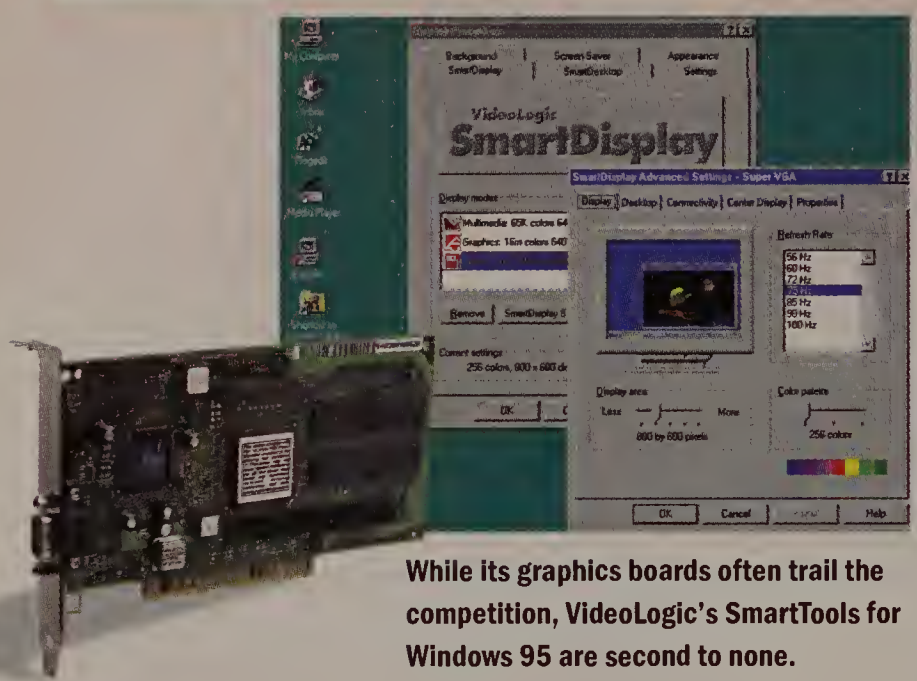
START DOING EXTRAORDINARY THINGS™

And all TravelMate 5000 Series notebooks come with lithium ion batteries, powerful Pentium processors, PCI engineering and support a full range of DockMate™ docking solutions for maximized productivity. Call us for a quote. **1-800-TI-TEXAS**. And start doing extraordinary things. Internet: http://www.ti.com E-mail: 2ti@msg.ti.com

Windows and the Windows logo are registered trademarks of Microsoft Corp. ©1996 TI.

TEXAS INSTRUMENTS

Circle 220 on reader service card



While its graphics boards often trail the competition, VideoLogic's SmartTools for Windows 95 are second to none.

8 Number Nine 9FX Motion771

Last Windows 3.1 ranking: 10

PROS: Good software utilities, supports high refresh rates

CONS: No DirectDraw or DirectVideo, software yields poor MPEG playback

While not the fastest VRAM board we tested, the $279 9FX Motion771 performed more consistently in our Win 95 testing than it did under Win 3.*x*. There's no DirectVideo, so AVI playback was average. The board's S3-optimized XingMPEG player turned in poor playback. Number Nine's HawkEye 95 utilities are good, but the version we saw needs to be running on the Taskbar at all times to be accessible from the Display Properties box. Number Nine says the next version will be better integrated with Win 95.

A few vendors, including Dell and MidWest Micro, have used the 9FX Motion771 in their desktop systems in the past. It supports very high refresh rates at resolutions over 800 by 600, making it a good match for the high-quality 17-inch monitors that desktop PC makers have been including with their power systems.

9 ATI Video Xpression

Last Windows 3.1 ranking: Not tested under Windows 3.1

PROS: Excellent MPEG playback, nicely integrated Win 95 utilities, easy installation, DirectDraw

CONS: Sluggish performance at 1024 by 768, doesn't support 75 Hz at 800 by 600 resolution

The $199 Video Xpression is ATI's first brand-new accelerator board in over a year and a half. Its PC WorldBench scores are middle-of-the-pack, but it's a step ahead of the competition in full-motion video quality. As you enlarge video clips to fill more of your screen, the Video Xpression smooths out the image both horizontally and vertically (most boards do so only horizontally) so that the video looks less blocky. Windows 95 users will have to wait for DirectVideo support to see these results. MPEG playback using ATI's Video Player was very good—the images looked smooth, and the clip didn't drop a lot of frames.

ATI's Windows 95 utilities are exceptional and can be accessed from the Display Properties box. Installation is simple and intuitive. Overall, the Video Xpression is a worthy successor to the Graphics Xpression, which held a place on our Top 10 from September 1994 to May 1996.

10 VideoLogic GrafixStar 700

Last Windows 3.1 ranking: 6

PROS: Best Windows 95 utilities we've seen, clearly written documentation

CONS: Sluggish for a board that uses VRAM, software yields poor MPEG playback

The $249 GrafixStar 700 slips to number ten after Windows 95 testing because its DRAM-like performance doesn't warrant a VRAM price. Still, it's feature-rich and user-friendly. VideoLogic's SmartTools 95 is the best we've seen, with snappy zoom and display centering tools, as well as a refresh rate utility. Tabs for accessing SmartTools are added to Windows 95's Display Properties box. In addition, VideoLogic's documentation is extremely well illustrated and simple to follow.

Even though the GrafixStar 700 barely managed average PC WorldBench scores, $249 for a VRAM board is something of a bargain, and if you run more graphics applications than we currently test, the VRAM can help performance, especially at high resolutions and color depths. The VESA Media Channel connector lets you add multimedia daughtercards. While VMC was once touted as a speedy alternative to the feature connectors found on most cards, few board vendors adopted the standard. VideoLogic's video capture, TV tuner, and MPEG playback cards list for $179 to $249.

Graphics Board Snapshots

These graphics boards were also tested this month but didn't make the Top 10.

ATI Graphics Xpression

After a long run during the Windows 3.*x* era, the economical $156 Graphics Xpression falls from the Top 10. Its Windows 95 performance was slightly below average, and its video playback was jerky. ATI's software is excellent, though, and the board's DirectDraw support makes it good for low-end Win 95 graphics programs. *ATI Technologies, 905/882-2600 ext. 1. Reader service no. 659*

Diamond Edge 3D 3400XL

The $579 Edge 3D 3400XL is designed for gamers, but it's important to note how it handles day-to-day applications. The answer: not so well. Despite its 4MB of VRAM, the Edge turned in below-average PC WorldBench scores. While it comes with cool 3-D games and built-in sound, it doesn't include Win 95 utilities. *Diamond Multimedia, 800/468-5846. Reader service no. 660*

Diamond Stealth64 Video 3200

Oh, how the mighty have fallen. After establishing itself as the best graphics board under Win 3.*x* for nine months, the $269 Stealth64 Video 3200 has tumbled off the chart. The reason is simple: Diamond's long-awaited GT Display Drivers for Windows 95 are slow. The board's PC WorldBench scores were more than 10 points lower than those of the next-slowest boards at both resolutions. As we went to press, the company was fixing the problem. Word is there's a conflict between the GT drivers and Diamond's new, easy-to-use InControl Tools 95. Check Diamond's Web site for updates. *Diamond Multimedia, 800/468-5846. Reader service no. 661*

SMILE MONITORS...YOUR FULL LINE MONITOR SOURCE, FROM 9" TO 21". SATISFY YOUR EXPECTATIONS FOR PRICE, PERFORMANCE, AND EXCELLENT RELIABILITY...WITH A SMILE. AT SMILE WE'RE DEDICATED TO PROVIDING THE BEST MONITOR FEATURES TO DEMANDING VALUE CONCIOUS USERS...

Picture Perfect Smiles

- HIGH RESOLUTION
- IMAGE SHARPNESS & CLARITY
- 3-YEAR LIMITED WARRANTY
- "GREEN" AND LOW RADIATION
- MICROPROCESSOR CONTROLS*
- PLUG & PLAY FOR WINDOWS "95**

*REV 3,5,7 SERIES MODELS
**REV 5 SERIES MODELS

To receive further information about our total line of monitors, call toll free
1(800) 876-4532 (ext. 3366)
or E-mail...SMILEKFC@AOL.com
SMILE USA
California, Texas and New Jersy
SMILE Worldwide
Germany, France, Benelux, Pacific Rim

SMILE

Smile is the U.S. subsidiary of Kuo Feng Corporation...
A worldwide leader in manufacturing quality, reliable, price performance monitors.

PC WORLD TOP 10 Monitors

CHIP TIP July 1995

The Smile **CB1716SL...**Hitachi CRT, 0.28 dot pitch, 1280 x 1024 resolution, on-screen digital controls (including tilt and parallelogram adjustments), plug & play capability, MPR-II, dynamic focusing

Circle 206 on reader service card

TEST REPORT Matrox MGA Millennium Leads the Top 10

BEST BUY

[1] Could not perform test at the VESA-standard 75-Hz refresh rate; test was run at 70 Hz.

Boards are arranged in order of overall performance from best to worst, based on the normalized, weighted scores from six tests.

Methodology We test each board as supplied by the manufacturer using PC WorldBench 1.0 at 800 by 600 at 16.8 million colors. All tests are performed under Windows 95 on a Dell Dimension XPS P133c with 16MB of EDO RAM, 256K of pipeline-burst cache, a 1.6GB Western Digital Caviar hard drive, and a 17-inch DDC 2–compliant monitor. We disable any power-saving features. We set the refresh rate to 75 Hz where possible and confirm the rate with a frequency counter. For a description of the PC WorldBench 1.0 tests, see the Test Report in this month's system review.

Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

Genoa Phantom 64V 2001

The $179 Phantom 64V 2001 was slow in our Windows 95 tests. While its Windows 3.*x* software utilities are very good, they haven't been fully ported to Windows 95. There's a Win 95 refresh rate meter, but you can't choose the VESA-standard 75 Hz—the closest setting is 72 Hz, still pretty flicker-free. To its credit, Genoa attaches the Win 95 utilities it does offer to the Display Properties box for easy access. The company promises a new version of its software soon, but even then, we expect sluggish performance will keep this budget board out of the running. *Genoa Systems, 800/934-3662. Reader service no. 662*

Genoa VideoBlitz 3AV

Unlike Genoa's Phantom 64V 2001, the $270 VRAM-based VideoBlitz 3AV is a strong performer—its PC WorldBench score of 178 ranked near the top. However, like the Phantom, the VideoBlitz is missing several Windows 95 software utilities that are commonplace in other boards. *Genoa Systems, 800/934-3662. Reader service no. 663*

miroVideo 22SD

The $219 miroVideo 22SD doesn't support refresh rates above 75 Hz at super VGA, and its Win 95 performance leaves something to be desired—its PC WorldBench score of 160 at 800 by 600 was among the lowest. The miro WinTools utilities are very good, but they aren't available from the Display Properties box; instead, you access them from tiny toolbars that can be moved out of the way. Installation is a bear, and the two-year warranty is on the short side. *miro Computer Products, 800/249-6476. Reader service no. 664*

Number Nine 9FX Motion331

Number Nine has squeezed the most performance out of S3's popular EDO DRAM design of any vendor to date. The $209 9FX Motion331's PC WorldBench scores were the highest among Trio64V+-based boards—at 1024 by 768 resolution, it was faster than many VRAM boards. Unfortunately, the Motion331 wouldn't play AVI files, leaving the company to work on a remedy. *Number Nine, 800/438-6463. Reader service no. 665*

VideoLogic GrafixStar 400

Unlike other GrafixStar boards, which are based on the VESA Media Channel design for attaching multimedia add-ons directly to the board, the $199 GrafixStar 400 uses the S3 Trio64V+ design. But like other GrafixStar products, its performance lags behind that of competitors' boards. *VideoLogic, 800/578-5644. Reader service no. 666*

PC EXPO in New York

June 18-20, 1996 • Jacob K. Javits Convention Center

This year announcing the addition of Networks Expo at PC EXPO.

IT's time to face facts about PC EXPO in New York.

fact: PC EXPO is where 130,000+ of the IT industry's most influential decision makers and 800 of the most innovative manufacturers get down to business.

fact: PC EXPO is designed for volume buyers from major corporations. Including financial services, health care, manufacturing, utilities, retail, communications, education and entertainment. Plus consultants, dealer/retailers, software developers, VARs, OEMs, service vendors and distributors.

fact: One out of six attendees at PC EXPO '95 came from companies with more than 10,000 employees. More than one in four were with companies employing over 2,500 people.

fact: More than 350 new products were introduced at PC EXPO in 1995, making it the place to see the newest software and hardware products.

fact: 95% of attendees at PC EXPO '95 visited at least one of its seven technology Pavilions. 78% visited at least three.

fact: The time to be thinking about the 1996 PC EXPO in New York is right now. For more information, call 800-829-3976, ext. 9217 or 201-346-1400. Or fax: 201-346-1602.

Exposition and Conference

PC EXPO in New York. IT's a matter of fact.

PC EXPO in New York is produced and managed by Blenheim Group USA, Inc.
Fort Lee Executive Park • One Executive Drive • Fort Lee, NJ 07024

PC EXPO in New York is a registered service mark of Blenheim Group USA, Inc.
PC EXPO in New York is a professional trade event only. Minors under the age of 18 may not register and are not permitted on site.
Show statistics obtained from research conducted at PC EXPO in New York, June 1995, Exhibit Surveys, Inc. Audience Survey.

It's What Makes Your CD-R Burn.

SCSI. The cool connection for hot peripherals.

SCSI (pronounced scuzzy) is the only way to connect your PC to any CD-recordable, including the hot new Pinnacle Micro® RCD-5020. That's just one more reason to give your PC a SCSI connection. To learn more about Adaptec® SCSI host adapters and to enter to win a free Pinnacle CD-R, or other prize,† call 1-800-655-3977 ext. 5541, or visit our home page at http://www.adaptec.com*

adaptec®

I/O. NOW MORE IMPORTANT THAN EVER.

† Register and request a copy of official rules and sweepstakes details. Limit one entry per legal U.S. resident. No purchase necessary. *For information by fax, dial 1-408-945-2570 ext. 5541, request document no. 14070.

©1995 Adaptec, Inc. All rights reserved. Adaptec and the Adaptec logo are trademarks of Adaptec, Inc., which may be registered in some jurisdictions. All other trademarks used belong to their respective owners.

JUST THE Facts

CD-ROMs vs. the INTERNET

GOT A QUESTION? ENCARTA, COMPTON'S, AND OTHER CD-ROM ENCYCLOPEDIAS HAVE THE ANSWER, BUT THE WEB IS OFTEN A BETTER BET.

BY DERK RICHARDSON

Thanks to CD-ROMs and the World Wide Web, we've finally got something at our fingertips. But whether that something is useful information—well, that's another question.

There are a lot of CD-ROM reference titles out there—one may even have been bundled with your PC. But that disc may not be the font of all wisdom. It may be excellent for certain types of information—say, general science—and completely lacking in others, like business law. It may be poorly organized and difficult to navigate. And the information it presents may be just plain wrong.

To find out, I went on a fact-finding mission, concentrating on four common areas of

ILLUSTRATION: DIANE FENSTER; PHOTOS: JON JONES/SYGMA, AND JULIAN BAUM, SCIENCE SOURCE/PHOTO RESEARCHERS

inquiry—science, history, business, and foreign languages. For science coverage, I looked up black holes. History? I studied the causes of the brutal turmoil in Bosnia. Since running a business means knowing how to comply with government regulations, I set out to understand the Americans With Disabilities Act of 1990. Finally, I embarked on a crash course in a foreign language (Japanese), trying to learn some common greetings and business terms.

In my research, I consulted five CD-ROM encyclopedias—1996 Grolier Multimedia Encyclopedia, Compton's Interactive Encyclopedia, Encarta Encyclopedia '96, the Guinness Encyclopedia, and Our Times Multimedia Encyclopedia of the 20th Century. I also looked at Compton's Reference Collection, Microsoft's Bookshelf '95, and SoftKey's Multipedia—three multiple-source reference collections that put a concise encyclopedia, a dictionary, and other reference tools on a single CD-ROM (Bookshelf '96 wasn't available in time for this article). Where appropriate, I then checked out specialized CD-ROMs, like atlases and language primers, that seemed promising for a particular research project. Finally, I searched for information on my topics on the World Wide Web.

Am I qualified to judge the accuracy of all this information? No. I therefore used experts in each field to help in judging the sources. For black holes, I consulted with physicist Frank Crawford, a professor emeritus at the University of California, Berkeley. My Bosnian expert, Bill Fitch, works with Bosnian refugees and is compiling an oral history of the Balkans. I checked my information on the Americans With Disabilities Act with Judith Lovell of the Pacific Disability and Business Technical Assistance Center in Oakland. And I forced a Japanese-American acquaintance, Miya Masaoka, to listen to my fractured conversations.

In general, I found the information in the CD-ROM encyclopedias far superior to that in the reference collections, especially for the more academic science and history questions. As often as not, however, the best information came from the Internet.

Science

What is a black hole?

The very concept of a black hole can boggle the mind more thoroughly than a Zen koan. To explain this phenomenon so the average person can understand it, you need imagination, a talent for language and visuals, and a firm grasp on physics. Most of the CD-ROM encyclopedias did well, but the Web beat them all.

CD-ROM Encyclopedias: Adequate Space

Grolier gives the best explanation—thorough yet capturing the essential facts in its first paragraphs. Encarta comes a close second. Our Times has two entries, its own and one from the included Columbia Encyclopedia; combined, they're shorter than Encarta's. Compton's entry is disorganized, offering a short initial definition (the same one as in its less ambitious Reference Collection) with additional material cross-referenced. Guinness has only a brief definition, the least adequate of all the encyclopedias.

What about creative and informative multimedia supplements to the text? They were apparently all sucked into a black hole, leaving nothing but the sort of static drawings you would find in an astronomy textbook, and one almost totally irrelevant video, in Compton's, of astronauts repairing the Hubble telescope. Okay, I couldn't expect a video clip of an actual black hole, but you'd think sophisticated software designers could devise something original and useful.

Reference Collections: Too Short

Here, brevity turned out to be the soul of misleading information. By omitting impor-

JULIAN BAUM, SCIENCE SOURCE/PHOTO RESEARCHERS

RESEARCH TOOL REPORT CARD

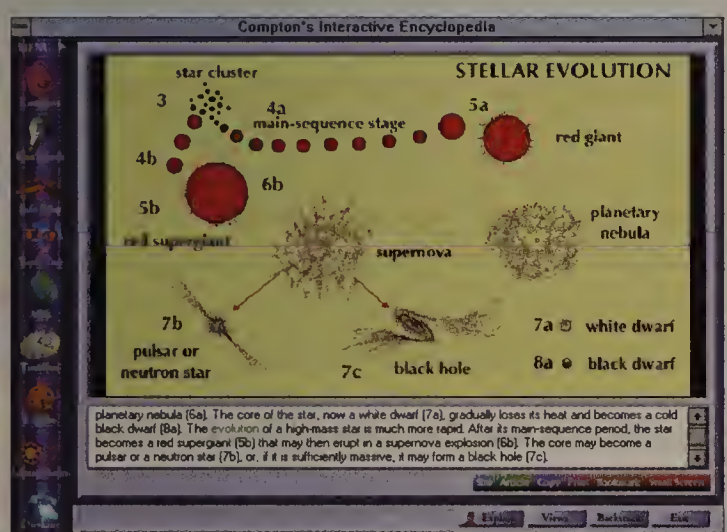
We've graded only the general interest CD-ROMs that we used for all of the research projects, leaving the specialized discs, good for only one project each, to themselves.

	SCIENCE	HISTORY	BUSINESS LAW	FOREIGN LANGUAGE	OVERALL GRADE
CD-ROM ENCYCLOPEDIAS					
Compton's Interactive Encyclopedia	B-	B	B-	F	C+
Encarta Encyclopedia '96	B+	A-	B-	B-	B+
Grolier Multimedia Encyclopedia	A-	B+	B-	F	B
The Guinness Encyclopedia	C+	C-	F	B	C+
Our Times Multimedia Encyclopedia of the 20th Century	B+	D+	D	F	D+
REFERENCE COLLECTIONS					
Compton's Reference Collection	C+	B	F	F	C-
Bookshelf '95	B	C	C-	F	C
Multipedia	C-	D	B	F	C
ONLINE					
World Wide Web	A	D	A	F	C+

tant explanations, the shorter treatments in the reference discs leave the overly dramatic impression that black holes are like "gigantic vacuum cleaners" (Compton's Reference Collection) that suck in everything, "including other stars" (Multipedia). The exception is Microsoft's Bookshelf, which fails to talk about black holes as one stage in the life of stars, but does manage through cross-references to hit the key issues.

Specialized CD-ROMs: Pure Fiction

For a different point of view, Grolier's Multimedia Encyclopedia of Science Fiction explains how black holes have been used in literature and film. The concepts are intriguing, at least if you can get through the stilted prose. For instance, take the theory that if you could fly into a black hole you would come out at a vastly distant location. The disc points out that this hypothesis offers writers a "means of dodging the relativistic limitations on getting around the Universe at faster-than-light speeds."



To help you understand black holes, Compton's Interactive Encyclopedia provides a diagram of stellar evolution.

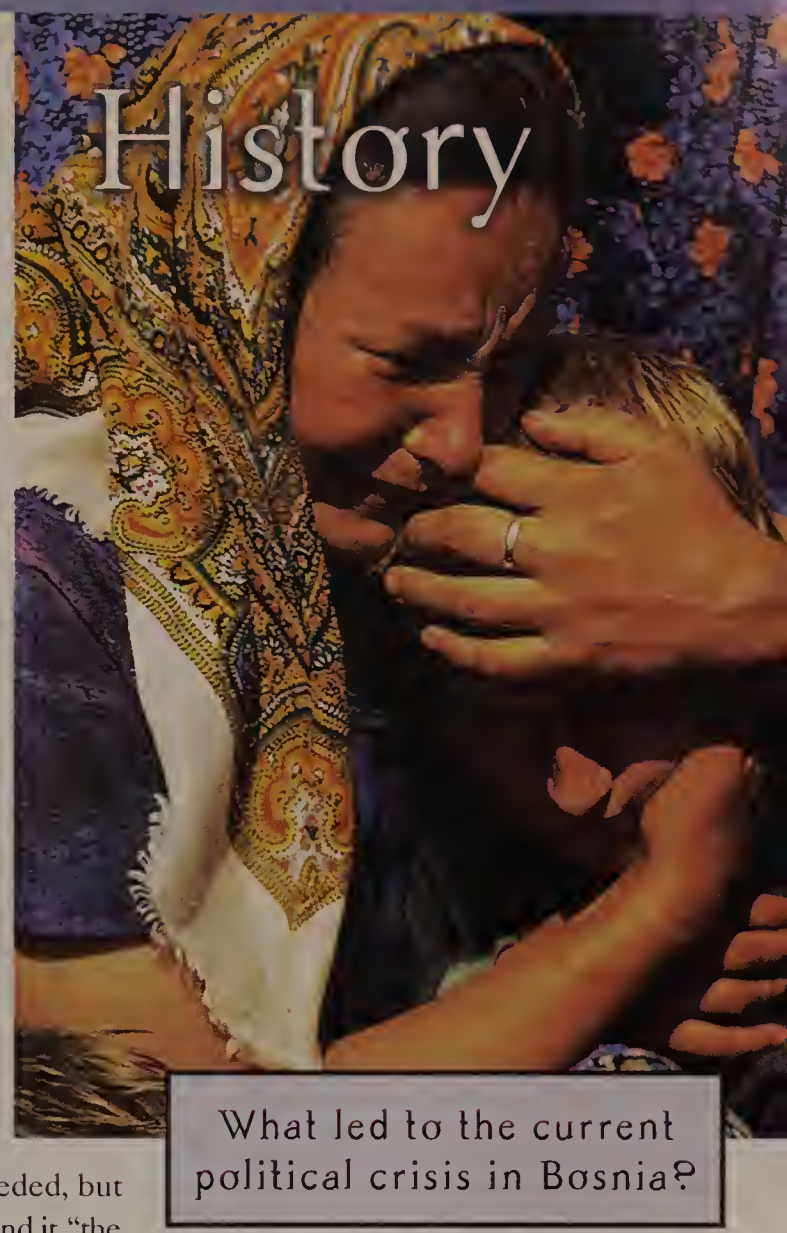
World Wide Web: Stellar Information

But my best find wasn't on a disc. Using Yahoo (http://yahoo.com) and WebCrawler (http://www.webcrawler.com), I searched the Net for the term *black hole*, and within 2 to 3 minutes uncovered a gem. On the University of California, Berkeley, Web site (http://physics7.berkeley.edu/ home.html), I discovered a terrific Black Holes FAQ (frequently asked questions) page that explains this phenomenon in plain and amusing language. "If all of this sounds very strange," explains the FAQ's author, Ted Bunn, "don't worry. It is strange." Questions range from the obvious—"What is a black hole?"—to the creative: "My friend Penelope is sitting still at a safe distance, watching me fall into the black hole. What does she see?"

I also checked Information Access's Cognito Student Research, a commercial subscription-based service that was in its beta period, and found plenty. In addition to a Collier's Encyclopedia entry, a search for the term *black hole* netted me articles from recent issues of *Discover*, *Science*, *Astronomy*, and similar magazines. The result was more information than I needed, but Professor Crawford found it "the most exciting." Cognito has since finished beta testing and is commercially available.

If you want to learn more about the natural world, don't bother with a CD-ROM reference collection. Use a CD-ROM encyclopedia. Or better yet, look for your subject on the Web—and keep an eye out for an FAQ.

How does a black hole absorb spiraling stellar matter? Here's how Our Times Multimedia Encyclopedia sees it.



What led to the current political crisis in Bosnia?

This is a complicated subject, and any attempt to simplify it is bound to fail...and certain to offend someone involved with the tragedy. Again, the encyclopedias proved more useful than the reference collections—at least some of them did. In this case, however, they beat the World Wide Web, as well.

CD-ROM Encyclopedias: Winners and Losers

The big disappointments here are Our Times and Guinness. Our Times offers only randomly organized facts that lack any clear sense of historical context, failing to mention even Yugoslavia's one-time influential Communist leader Josip Tito. Our Times partially redeems itself, however, with some dramatic recent photos and a video of war footage.

Guinness is a step up: From its three paragraphs I gleaned a basic understanding of Bosnia's history that I probably wouldn't find in my daily newspaper. But with vague prose like "Bosnia declined in the 1390s," Guinness quickly bottoms out as a colorless and all-too-skeletal chronology.

PHOTO: JON JONES/SYGMA

Compton's is a big improvement, paying more attention to the complex relationships between nationalities and giving a more comprehensive account of the formation and breakup of Yugoslavia. It also contains plenty of geographical and cultural information—all of which is very interesting, but not what I was looking for.

Encarta wins this round, although Grolier comes in a very close second. Both of these CD-ROMs contain solid and informative surveys by Sabrina Petra Ramet, whom my expert consultant Bill Fitch admires as one of the best documentarians of Balkan history and culture. Encarta's marginal victory comes from its giving Ramet more room to stretch out and convey information. I came away from my Encarta encounter with a better understanding of what has led to the current horrors.

Reference Collections: Just Dumb

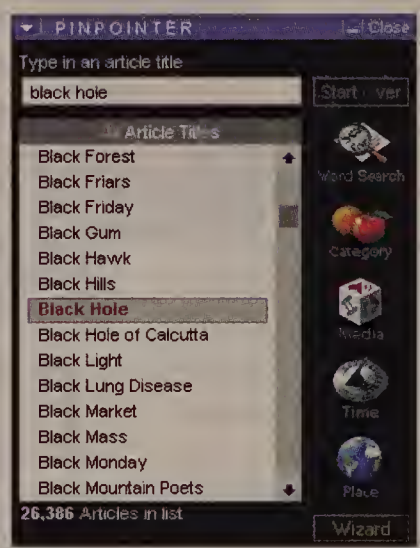
In confronting a complex subject like this one, brevity invites failure. The extreme example is Multipedia, which devotes a mere paragraph to the subject—an approach Fitch calls "just

Grolier Multimedia Encyclopedia offers an extensive and even-handed account of the history of Bosnia.

YES, BUT ARE THEY EASY TO USE?

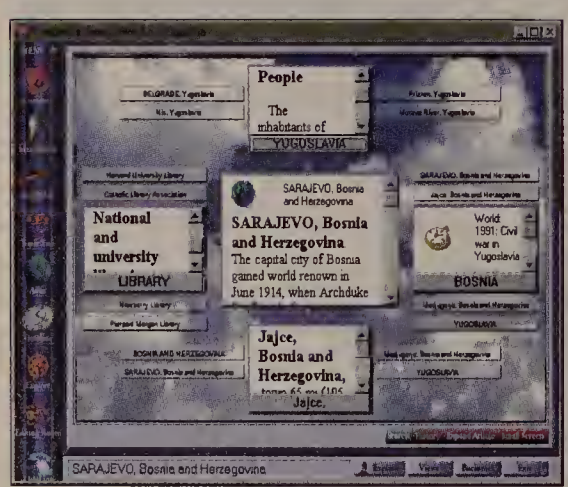
An electronic encyclopedia should be easier to use than a book. And for the most part, they are. All the CD-ROMs I looked at make it easy to find any text articles, pictures, and other multimedia goodies that contain a particular word. And they all have hypertext hot links that can take you to related topics with the click of a mouse.

Each disc attempts to put its own unique stamp on the same essential tools—articles, interactive maps, media galleries, editing rooms, games, and catchy screen and window formats—all tied together with a search engine. But at bottom, the differences are chiefly cosmetic. You should be able to find what you want on any of these discs—provided that it's there to be found.



Encarta lets you search article titles by typing in your subject.

Compton's is cluttered with navigational options, ranging from the common atlas and time line to an "Info Pilot" that finds links between subjects by association. But the busy screen gets confusing, and you may sometimes do a double-take trying to figuring out what window relates to what.



Compton's Info Pilot connects subjects in logical and sometimes creative ways, but the busy screen can be confusing.

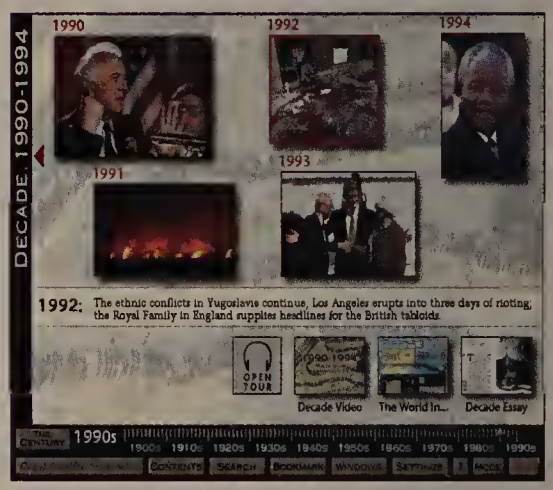
Encarta is visually the most elegant of the encyclopedias, with soft colors and slickly moving windows. It's also the easiest to use, with a simple home screen and straightforward search options. The interface isn't gimmicky, but it looks nice, is fun to use, and gets you where you want to go.

Grolier imitates the old library system, using tabs reminiscent of card catalogs and file boxes. Any items that might relate to what you're reading—pictures, multimedia clips, other articles—show up as tabs above your window. The result is almost as easy to use as Encarta.

Guinness boasts a graphic search engine that takes you from theme to theme, narrowing the topic as you go, and posting an outline in a window so you can see where you've been. It's easy to get going, but the more you use it, the more cluttered your screen becomes and the more you realize how clunky the interface is.

Our Times is really a glorified time line, allowing you to browse through decades, years, or galleries of photos tied to newsworthy events. And you can leap across time by clicking on various buttons, graphics, or highlighted words. Our Times isn't the easiest CD-ROM to navigate, but it's certainly the most fun.

The reference collections often resemble their encyclopedia relatives. Like Encarta, Bookshelf is a model of simplicity and refinement, while Compton's Reference Collection's user interface is virtually identical to the one in Compton's Interactive Encyclopedia.



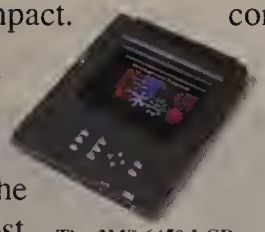
Our Times makes it possible to search for subjects graphically from its time line.

SoftKey's Multipedia has no larger sibling to look up to. It combines a simple format of well-designed screens and sophisticated navigation tools to help you find your way through its 16 reference works—more than either Bookshelf or Compton's offers. And it's as easy to use as Grolier.

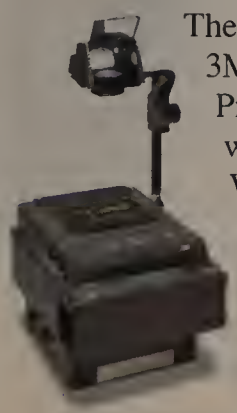
Great presentations begin with 3M, the power brand in electronic projection.

3M provides real power for the presenter. The power to capture attention, to inform, to persuade …to communicate with impact.

3M innovation has created the broadest range of presentation products, services and "how-to" in the world — including the most powerful projectors available anywhere. Projectors that present true-color multimedia in normal room light.


The 3M™ 6450 LCD Projection Panel

The new 11,000 lumen 3M™ 9850 Overhead Projector is the world's brightest. When used with the 3M™ 6450 LCD Projection Panel, it projects colorful, compelling output from both computer and video sources.


The 3M™ 9850 Overhead Projector and 3M™ 6450 LCD Projection Panel

And the 3M™ MP8020 Multimedia Projector combines convenience with power. This self-contained, lightweight projector allows you to integrate multiple sources into a single, easily controlled presentation.

The 3M™ MP8020 Multimedia Projector

All 3M electronic projection systems include state-of-the art, user-friendly features. So they're not only brilliant, they're brilliantly simple to operate.

Plug 3M power into your presentations. And get up to a $350 rebate on special LCD panel and overhead projector combinations when you do. Call or visit our Web site today for details. And be sure to ask for our free video and interactive CD-ROM on the MP8020, plus our free interactive diskette: *Choosing an Overhead Projector.*

We're easy to reach

800-952-4059

http://www.mmm.com/office
e-mail: presentations@mmm.com

© 3M 1996

Circle 7 on reader service card

3M *Innovation*

dumb." Bookshelf '95, on the other hand, contains sufficient factual material but little immediate prewar history, and is therefore lacking in context.

The one exception is Compton's Reference Collection, which wisely gives the subject the room it needs. In fact, its article is really the same as the good-but-not-great essay you would find in Compton's full encyclopedia.

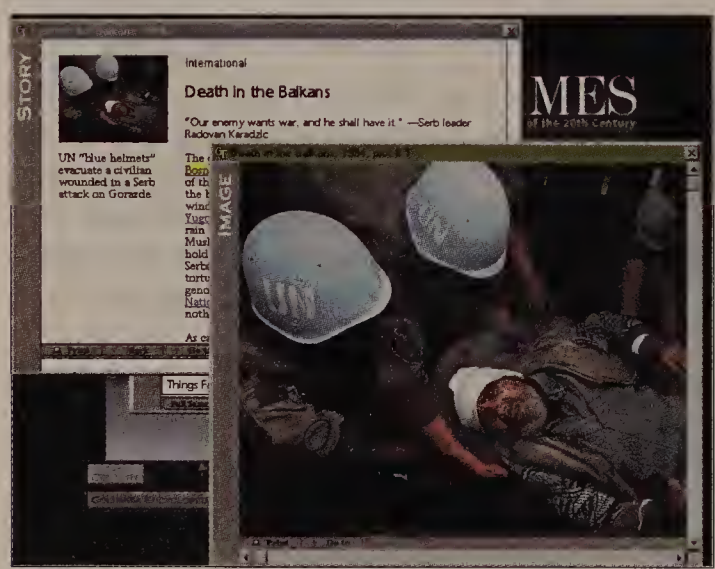
Specialized CD-ROMs: Atlas Failed

I thought an atlas would prove useful in researching this topic. I was wrong. I looked at Creative Wonders' ABC World Reference 3D Atlas and Microsoft's Encarta World Atlas '96. Although each contained a plethora of geographical data about Bosnia, neither yielded the sort of historical or political information I wanted.

World Wide Web: Historically Lacking

In this case, the Internet, too, proved inadequate. True, it has acres of up-to-the-minute news on the ongoing crisis, making it a great tool for following the current story. But it's not much for historical background.

If you're looking for history, go to an encyclopedia, preferably Encarta or Grolier. Other sources just don't cover the past as completely as these two.



Textually speaking, Our Times failed to give a coherent overview of the Bosnian conflict, but some of its photographs spoke volumes.

Business Law

What is the Americans With Disabilities Act?

If you manage employees or serve the public, you need to know about The Americans With Disabilities Act of 1990, which defines and expands the rights of nearly 46 million Americans. Not surprisingly, the Internet is the big winner here.

CD-ROM Encyclopedias: Very Little

The pickings here are slim. Our Times offers only one sentence on the ADA. Encarta and Grolier both have solid entries on "disabled people" or "disabled persons" but mention the ADA only in passing. Compton's offers just a five-line entry, but at least it summarizes the law's requirements. Guinness doesn't mention the act at all.

Reference Collections: A Start

The surprise here is Multipedia, which offers the most comprehensive survey of the ADA I found on a CD-ROM: Here at last is a concise outline of its mandates. Is it enough information to form your company's policies? No, but it's a start.

The other collections don't do as well. Bookshelf '95 gives the ADA only a brief description, and Compton's Reference Collection doesn't mention it.

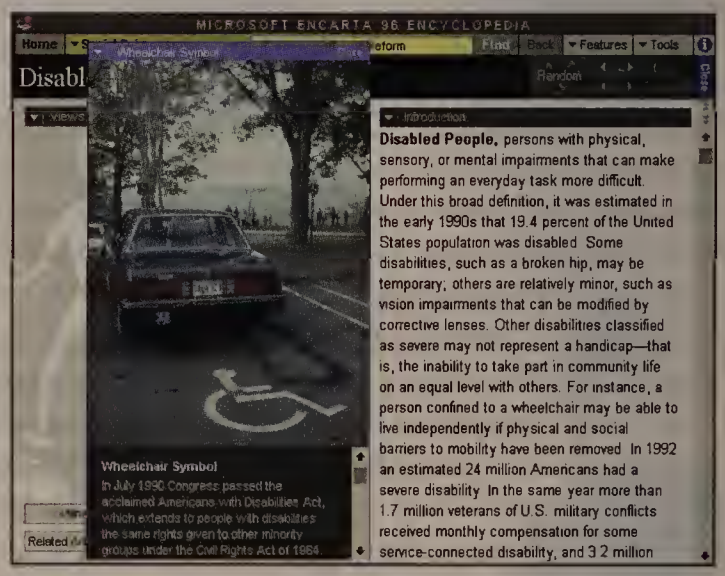
Specialized CD-ROMs: High Cost

I found no reasonably priced consumer CD-ROMs on the ADA or like subjects. Discs for lawyers, costing about $1000, lie beyond the scope of this article.

World Wide Web: All the Info

If you need to learn about the ADA, browse the Net. When I asked Yahoo and WebCrawler to search for the words *disability* and *ADA* together, I found several informative summaries plus posts of the complete text of the law. However, Judith Lovell, my expert, found several minor errors in the posted definitions, some of which could lead a small business owner in the wrong direction.

Not so at the Department of Justice's own Gopher site (accessible on the Web at gopher://gopher.usdoj.gov/1/crt/ada). There you'll find the complete text of the act as well as technical assistance manuals, questions and answers, and other information. For those willing to pay for information, the



A photograph of the handicapped parking symbol accompanies one mention of the ADA in Encarta '96.

PHOTO: LARRY DOWNING/SYGMA

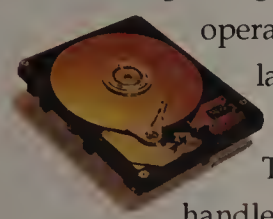
MULTIMEDIA READY

UPGRADE AHEAD

SHIFT TO SEAGATE

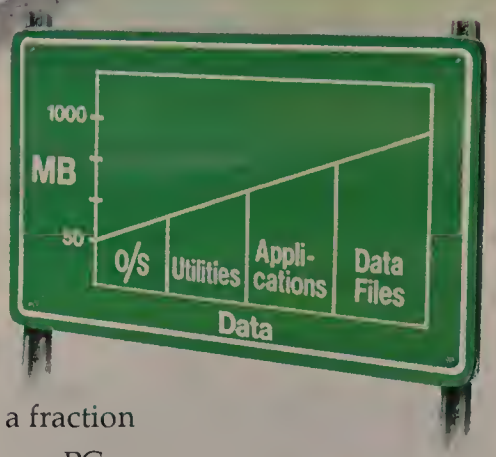
Get in gear with Seagate disc drives.

Increasing storage requirements driven by upgrades in operating systems, applications software and larger data files place mountainous demands on your hard drive's capacity. To make sure your PC has what it takes to handle the long road ahead, upgrade to a high capacity, fast Seagate disc drive today.



MICROSOFT. WINDOWS NT. READY-TO-RUN

Seagate disc drives are multimedia ready, and are fully compatible with your PC, Windows 95, Windows NT and NetWare*. And whether you choose to upgrade with our Fast ATA-2 or Fast SCSI-2 interface, a Seagate drive can significantly increase your system's performance at a fraction of the cost of a new PC.



yes NetWare Tested and Approved

Call 408-438-8111 and ask for a copy of our SeaLAB Report that details how upgrading to a Seagate drive can bring your PC to peak performance. Or test drive our Website at http://www.seagate.com.

Designed for Microsoft® Windows®95

Model	Capacity	Interface	Transfer Rate	Seek	Rotational Speed
Medalist 1080sl SCSI	1.08 GB	Fast SCSI-2	10.0 MB/s	12.5ms	5,400 RPM
Medalist 1270sl	1.28 GB	Fast ATA-2	16.6 MB/s	10.5ms	5,400 RPM
Cabo 1276	1.27 GB	Fast ATA-2	16.6 MB/s	12.5ms	4,500 RPM
Cabo 1621	1.62 GB	Fast ATA-2	16.6 MB/s	14.0ms	3,600 RPM
Medalist 2140	2.10 GB	Fast ATA-2	16.6 MB/s	10.0ms	5,400 RPM

Seagate

THE DATA TECHNOLOGY COMPANY

*Cabo drives only

Seagate and the Seagate logo are registered trademarks of Seagate Technology, Inc. Microsoft, Windows 95, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation, NetWare is a registered trademark of Novell
©1996 Seagate Technology, Inc.

Circle 209 on reader service card

beta version of Cognito yielded a host of useful, current periodical articles on how the ADA is affecting our society.

If you depend on an encyclopedia to help you stay within the law, you may end up in jail. But you can find plenty of stuff on the Web to keep your nose clean.

KID'S STUFF

If you have a school-age child and a CD-ROM encyclopedia, chances are the two know each other. Each of the major encyclopedias includes something in its interface that's just for kids: Grolier has interactive animations—some in 3-D. Encarta boasts a quiz game. Compton's is the child's paradise, with a host of educational, interactive "playrooms" where kids can explore the news, outer space, musical instruments, or the great outdoors.

To get a child's eye-view of the reference CD-ROMs, I invited my next door neighbor, 12-year-old Joseph Bormolini, over to take a look. At the time, Joseph was working on a report on Puerto Rico. With a casual attitude that put me in my place, Joseph was soon navigating the CD-ROMs as easily as he rides his bike.

By the time kids reach Joe's age, there's little need for anything that dumbs down the format, but they still like glitz. Joe thought the various gimmicks and games were "cool" and admired the colorful screens and graphic layouts of Multipedia and Grolier.

But his favorite resource was Encarta. "I just like the way it looks and the way it works," he explained. "I just think Encarta's cool, and it's easy for me to find what I need."

Compton's Interactive provides kids with a range of environments to play and learn in.

Language

What are some greetings and common business terms in Japanese?

This is where most general reference CD-ROMs fail, the Internet right along with them. To be fair, this isn't the sort of project an encyclopedia is designed for, but what's the fun if I can't push these discs to their limits? In a situation like this, you're better off with a specialized CD-ROM like RXL Pulitzer's Japanese To Go.

CD-ROM Encyclopedias: Multimedia Helps

Not that all the encyclopedias are useless. Both Encarta and Guinness let you listen to and practice a limited set of words and phrases in Japanese and other languages—a truly practical use of multimedia. Encarta will play the Japanese pronunciation of "Japanese," "my name is Masashi," "yes," "no," "thanks," "good-bye," and the numbers one through ten. Guinness includes several greetings and common phrases, including "What's this in Japanese?" and "I love you" (try using that on your next business trip). Guinness thoughtfully spells out the words and phrases phonetically on screen. Neither encyclopedia would provide a tourist or businessperson with a full repertoire for a trip to Tokyo.

The other three encyclopedias offer nothing in this area.

Reference Collections: Nothing

Zip. Nada. Zero.

Specialized CD-ROMs: Great

Here, I hit pay dirt. If you need a quick introduction to the language, Japanese To Go, with its six lessons, vocabulary practice, calligraphy instruction, video situational skits, quizzes, and "bento box" of interactive treats, is well worth the investment of 50 bucks and several hours of your time. Its dictionary contains only about 125 words, but that's far more than Encarta or Guinness.

To confirm that Encarta, Guinness, and Japanese To Go were teaching me correct terms, I called up my friend Miya Masaoka and tried out a few phrases. She said I was getting close and that my limited vocabulary was accurate.

World Wide Web: Wild Goose Chases

My search for *Japanese language* took me to a commercial site that was selling foreign language CD-ROMs but didn't have one for Japanese. I did find a couple of Japanese home pages, including one with links to two online dictionaries—but one site was under construction and the other had changed its URL and the link was obsolete.

If you want even a cursory introduction to a foreign language, neither the encyclopedias nor the Web will do. You'll have to invest in something a little more specialized.

CD-ROM or Modem?

Not surprisingly, in view of their student and general audiences, the CD-ROMs proved more useful on academic science and history than on business-oriented questions. And the encyclopedias almost always did better than the reference collections, with their brief, shallow descriptions.

But as CD-ROMs come into their own as research tools, they're already threatened by the new kid on the block: the World Wide

PHOTO: DAVID HARRY STEWART/TONY STONE IMAGES

CORELDRAW!™

#1 IN CUSTOMER SATISFACTION!

CorelDRAW™ 6 is the world's premier 32 bit Windows™ 95 graphics application, offering fully featured applications for illustration, photo-editing and bitmap creation, business and multimedia presentations, 3D rendering and animation.

"CorelDRAW 6's new bells and whistles don't overshadow the strength of the original components, many of which continue to grow in potency, depth, and ease of use. It's an impressive suite of powerful 32-bit applications that may just satisfy all your graphic needs."

PC Magazine, November 7, 1995

In a recent study†, **CorelDRAW scored an overwhelming satisfaction level of 93%!** "CorelDRAW scored the highest in satisfaction out of all packages mentioned," said Chris Le Tocq, analyst with SoftTracks in Los Altos, California. "Users of graphics software have a wide variety of mature and well-crafted packages to choose from...CorelDRAW is definitely a leader in its field."

PRODUCT	SATISFACTION
CorelDRAW	**93%**
AutoDesk AutoCAD	91%
Symantec Norton Utilities	91%
Adobe Photoshop	89%
Claris ClarisWorks	89%
Lotus Ami Pro	89%
Microsoft Office	87%
Aldus PageMaker	86%
Microsoft PowerPoint	86%
Meca MYM	85%

With revolutionary color management, publishing capabilities, an integrated interface and over 22,000 clipart images, 825 fonts and 100 photos on CD-ROM, CorelDRAW™ 5 is the best in graphics and publishing!

1995 *Windows Magazine* Reader's Choice Award
Best Paint and Draw Application

Winner of over 200 international first-place awards, including 20 **Reader's Choice Awards**, CorelDRAW has set a shining example in the critical area of customer satisfaction.

With illustration, charting, photo-editing, tracing/OCR, presentation and animation capabilities, plus hundreds of fonts and thousands of clipart images, CorelDRAW™ 4 is the ideal desktop publishing package!

1994 *PC World USA* World Class Reader's Choice Award
Best Drawing Application

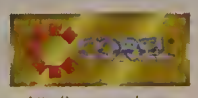
Circle 78 on reader service card

EGGHEAD®
All you need to know.
1-800-EGGHEAD
*US$ plus applicable taxes.
KUR-0192-US

Enter the Corel $3,000,000 World Design Contest! (September '95 to July '96) To receive a faxed copy of the contest rules and an entry form, please call: 1-613-728-0826, ext. 3080, Document # 1125. To leave a message: 1-613-728-0826, ext. 81609. To send a fax: 1-613-728-2891.

†Home Office Marketing Essentials (HOME) Study, conducted by the California-based InTech Group.

All product and company names are trademarks or registered trademarks of their respective companies.



http://www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080

CorelDRAW™ 3 makes it easy to create dynamic graphics. In addition to powerful illustration tools, you'll also receive CorelCHART™, Corel PHOTO-PAINT™ and CorelSHOW™—all in one value-packed box!

Five 1993 *Publish* Reader's Choice Awards
Favorite New Product, Type Special Effects, Clipart, Paint and Draw

Web. The rich lode of accurate information on black holes and the ADA that I found online hints at things to come. Indeed, Encarta, Grolier, and Compton's all offer equivalents of their CD-ROMs on one online service or another. CD-ROM–based research tools may be no more than a technological stopgap in the forward march of global electronic networking. But like old vinyl LPs, they'll make great collector's items when the Internet puts them out of print.

Derk Richardson writes on music for the San Francisco Bay Guardian *and other publications and teaches underwater scientific research at the University of California, Berkeley.*

• **1996 Grolier Multimedia Encyclopedia** $44.99, **The Multimedia Encyclopedia of Science Fiction** $44.99; Grolier Interactive; 800/285-4534, http://www.grolier.com
Reader service no. 677

• **ABC World Reference 3D Atlas** $49.95; Creative Wonders/Electronic Arts; 800/543-9778, http://www.ea.com/crwonders.html
Reader service no. 678

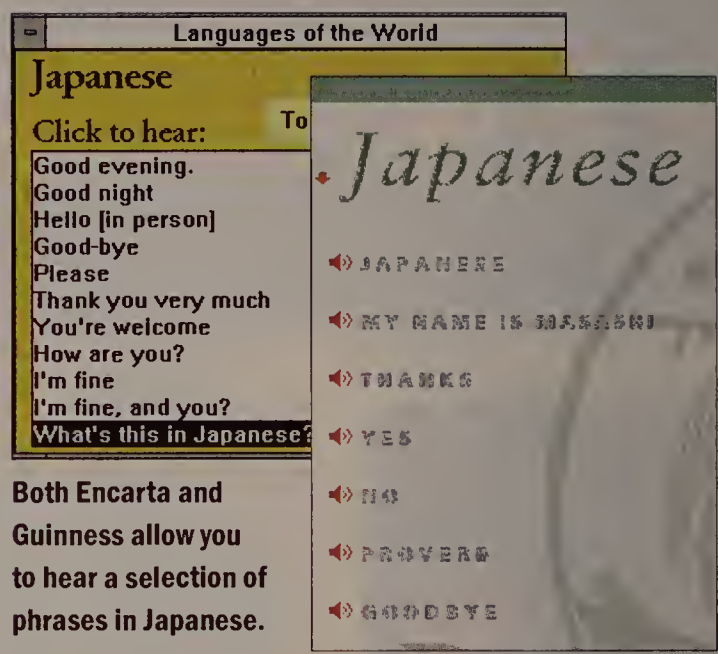
• **Cognito Student Research** $9.95 a month; Information Access Co.; 800/288-6783, http://www.cognito.com
Reader service no. 679

• **Compton's Interactive Encyclopedia** $49.95, **Compton's Reference Collection** $49.95; Compton's NewMedia, Inc.; 800/227-5609
Reader service no. 680

• **Encarta Encyclopedia '96, Bookshelf '95, Encarta World Atlas '96** $54.95 each; Microsoft; 800/426-9400, http://www.microsoft.com
Reader service no. 681

• **The Guinness Encyclopedia** $39; Wayzata Technology; 800/735-7321, 218/326-0598 (fax), WayzataTec@aol.com, http://Wayzata-Tech.com.
Reader service no. 682

• **Japanese To Go** $49.95; RXL Pulitzer (distributed by Creative Multimedia; 800/262-7668, 503/241-4351)
Reader service no. 683



Both Encarta and Guinness allow you to hear a selection of phrases in Japanese.

• **Multipedia** $79.95; SoftKey Int'l; 800/227-5609, http://www.softkey.com
Reader service no. 684

• **Our Times Multimedia Encyclopedia of the 20th Century** $69.95; Vicarious; 800/465-6543 ext. 900, http://www.vicarious.com
Reader service no. 685

For more information on all products in this article, circle reader service no. 906.

HAIL, BRITANNICA

When I was a child and reference books were printed on paper, I would go to just about any encyclopedia in the library except Britannica. I was daunted by its enormity and its sometimes curiously British tone.

Today the medium has changed, but the substance hasn't. If the text entries in Encarta, Compton's, and Grolier are Hemingway short stories, the articles in the electronic version of Britannica are Dickens novels—rich, dense, long, and British. And as you'd expect, there's no multimedia to speak of. In short, the $995 Encyclopaedia Britannica CD-ROM is simply a breed apart.

If the CD-ROM is too big an investment for you, you can subscribe to the Web edition of Britannica for $120 to $300 a year. The versions are essentially identical—the data on the CD is in the Web's standard HTML format, and it even comes with the popular Netscape Navigator browser. The Web version, of course, is updated more regularly.

Interface for the Gentry

Money isn't all you'll invest with Britannica, however. There's time, too—this is not an encyclopedia you can just pick up and use. The CD-ROM comes with a hefty owner's manual thicker than what you get with most new cars and its own instructional videotape. Even if you know Navigator, you'll have to learn Britannica's complex search engine.

But once you've mastered Britannica, you'll be able to find what you need. Any computer-literate 12-year-old can type in a natural language question like "What is a black hole?" and then refine, expand, or narrow the search. You can navigate with hypertext links, so as not to get bogged down in the encyclopedia's abundance.

How similar are the CD-ROM and Web versions of Encyclopedia Britannica? Look closely—this is the CD-ROM version.

The Benefit of Text

It's amazing what you can put on a CD-ROM when you forgo multimedia. In addition to the entire 44 million words of the printed edition, the Britannica disc carries an additional 1000 or so articles, 2000 illustrations (maps, flags, photographs, tables, drawings), and the Merriam-Webster Collegiate Dictionary.

Unless you're a serious academic, though, an encyclopedia is probably not worth a month's mortgage. Still, when it comes to comprehensiveness, Britannica is without peer.

• Encyclopaedia Britannica CD-ROM $995; annual subscription to World Wide Web version $120 (students), $150 (home use), $300 (single business user); site licenses also available; Encyclopaedia Britannica; 800/323-1229, http://www.eb.com
Reader service no. 686

Model 76i
shown with optional 7 watt dome speakers.

Performance. Art.

Introducing Studioworks, the new generation of computer displays from

Studioworks

GoldStar. On the performance side, Studioworks delivers a clearer, sharper image and more accurate color, edge to edge. Plug and play compatibility with Windows® 95 sets optimal image characteristics automatically*. A compact design fits more screen into less space. And new digital on-screen controls make precise, custom adjustment simpler. For the artist in you, Studioworks displays the fine details and the subtle tones and textures, to give your vision that added brilliance. The new Studioworks series from GoldStar. They're more than monitors, they're masterpieces. Ask for them at your local computer retailer.

S T U D I O W O R K S

MODEL	SCREEN	PITCH	MAX. FLICKER-FREE RESOLUTION
20i	20" FST (18.76" VIS)	.28mm dot	1280x1024 @ 76 Hz NI
78i	17" FST (15.7" VIS)	.26mm dot	1280x1024 @ 76 Hz NI
76i	17" FST (15.7" VIS)	.28mm dot	1024x768 @ 80 Hz NI
56i	15" FST (13.6" VIS)	.28mm dot	1024x768 @ 80 Hz NI
56m†	15" FST (13.6" VIS)	.28mm dot	1024x768 @ 80 Hz NI

† Built in stereo amplifier and speakers. * Requires DDC compatible video card.
Microsoft and Windows 95 are registered trademarks of Microsoft Corporation.

Designed for Microsoft Windows 95

GoldStar

LG Electronics

LG Electronics U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs, NJ 07632 (201) 816-2000

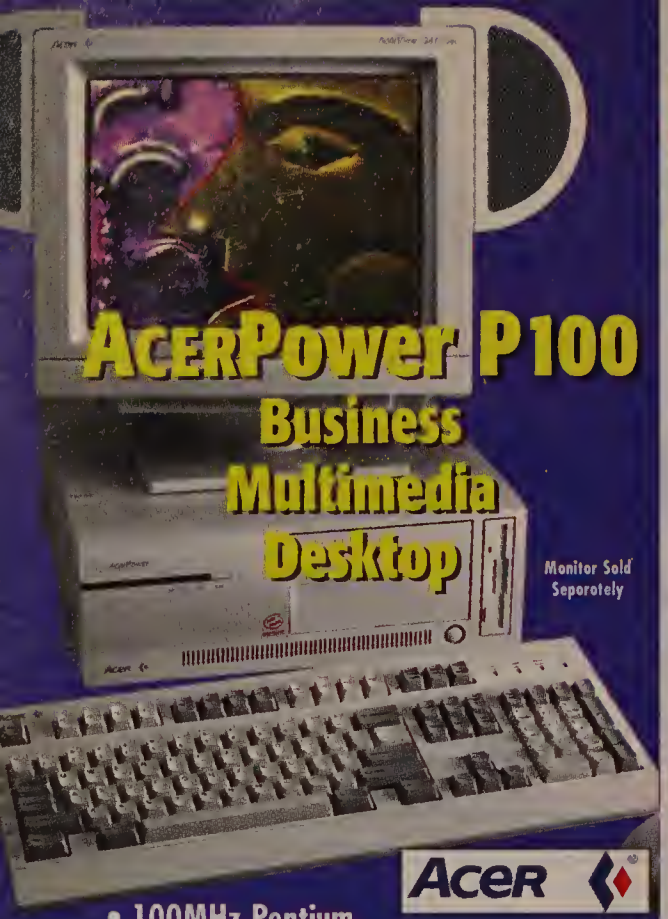
3 YEAR WARRANTY

Circle 96 on reader service card

CALL 800-800-2787 to order!

PC

FREE TECH SUPPORT • NEX



AcerPower P100 Business Multimedia Desktop

Monitor Sold Separately

Acer

- 100MHz Pentium
- 1GB HDD, 8MB RAM, 256 L2 cache
- 6x CD-ROM Drive
- 3-Watt Acros speakers
- Creative Labs Vibra 16 Sound Card
- Preinstalled Windows 95, Lotus SmartSuite 1996, Quicken SE 1996, Acer Utilities

NEW!

$1499

28805

FREE! MEMORY INSTALLATION!

SIMMS

4MB	8MB	16MB	32MB
as low as $89.95	as low as $169.95	as low as $349.95	as low as $699.95

Purchase a computer & memory upgrade together and we'll install your new memory upgrade *at no extra charge!*

AMAZING LOW PRICE!

$1999

Satellite 100cs

- 75MHz Pentium
- 8MB EDO RAM, 504MB HD
- 10.4" dual scan display
- Plug & Play
- Integrated AC adapter

26844 TOSHIBA

Extensa 510

NEW!

$2249

- 100MHz Pentium PCI Bus Architecture
- 8MB RAM, upgradeable to 40MB
- 10.4" dual scan display
- 810MB HDD, 16-bit audio sound
- Built-in speaker & microphone
- Dual boot one-time selection of Windows for Workgroups or Windows 95

28792 Texas Instruments

AT&T CAPITAL CORPORATION LEASING SERVICES

Available to businesses with 2+ year history
Minimum purchase $1,000 (Hardware)
or Minimum purchase of $3,000 (Software)
Flexible payment terms* Corporate hours 9 a.m.-7:30 p.m.
*Payments shown in catalog based on Fair Market Value— 36 month term

For Leasing Specifics From Our Corporate Account Managers
Call 800-800-0014

PC Connection

NEW PRODUCT!

DeskJet 680C Printer

- Print up to 5ppm
- Convenient built-in color
- 2-sided printing option
- Paper types: banners, labels, transparencies and envelopes

HEWLETT PACKARD

NOW ONLY!

$319.95

28486

LOWEST PRICE EVER!

4X Internal CD-ROM Drive

MDS

State-of-the-art performance for smooth-action video and multimedia!

NOW ONLY! $69.95

28655 or 27011

COMPUTERS

25745	AcerNote Pro 954 75MHz Pentium	$2299.
24248	Compaq LTE 5000 5/75 Notebook	2869.
24393	Compaq ProLinea 5100E Desktop	1459.
26706	IBM PC330 166MHz Desktop	2599.
28729	IBM ThinkPad 760E SLIM 120MHz 12.1"TFT	4899.
28728	IBM ThinkPad 760EL, 100MHz 111.3" DS	3299.
28716	IBM ThinkPad 760ED 133MHz 12.1"TFT 4X	6899.
28337	Inteva 5/133 850MB HD MiniTower	899.
2B5B0	MDS 5/100 CD MiniTower	1399.
25090	MDS Notebook P75- 800M8 CD	2699.
28790	TI Extensa 570CD	2B99.
27033	TI TravelMate 5130, P90, 10.4" TFT	3399.
24944	Toshiba T610CT/P90, 9.5" TFT	3999.
25180	Toshiba Tecra 700CS, 120MHz Pentium	4199.

EDUTAINMENT

2333	Broderbund Myst CD	$44.95
23441	Edmark Thinkin' Things 3 CD	42.95
27394	Elec. Arts Wing Commander IV	54.95
26769	Mech Warrior 2 & Expansion Pack	69.95
15783	Davidson Math Blaster CD	35.95
28140	Maxis Sim City 2000 Special Edition	44.95
24145	Infopedia 2.0 w/Free Me and My World	49.95

COMMUNICATIONS

11396	Hayes ACCURA 144+FAX144	$94.95
16952	MDS PC144B FaxModem	49.95
17471	Megahertz XJ2288 PCMCIA Fax	289.95
4410	Microcom Carbon Copy-Windows	89.95
21046	NetManage Internet Chameleon	24.95
17963	Practical Peripherals PM288HCII V.34	159.95
7779	Server Tech Remote Power Dn/Dff	119.95
18712	Spry Internet In A Box	39.95
23211	SupraExpress 288i PnP	139.95
25408	Symantec pcANYWHERE Win 95	139.95
25054	WinFax Pro 7 for Win 95	84.95
14152	Zoom VFX 14.4V Voice FaxModem	149.95
23610	Zoom 28.8 Int. Fax/Voice/Speaker	199.95

UTILITIES

19989	Connectix RAM Doubler	$54.95
26128	Dr. Solomon's AntiVirus Toolkit for Win 95 w/ quarterly update	79.95
28662	Microsoft Internet Info Server	99.95
22141	Norton Utilities Win95 Tradeup	59.95
25638	Duarterdeck DEMM 8	64.95
2214B	Symantec AntiVirus Win95 Tradeup	29.95
25801	Vertisoft RemoveIT! 95	34.95

BUSINESS

12868	AEC Fasttrack Schedule	$169.95
25479	Claris FileMaker Pro 3.0 Upgrade	99.95
25306	Lotus Word Pro 96 w/rebate	49.95*
	*After $20 rebate for owners of any other Lotus Desktop or Communications product	
22315	Microsoft Excel 95 Upgrade	99.95
2B662	Microsoft Internet Info Server	99.95
22294	Microsoft Plus! for Windows CD	44.95
22289	Microsoft Project Windows 95	449.95
23871	Microsoft Publisher for Windows 95	74.95
22293	Microsoft Word for Win95 Upgrade	99.95
26388	Microsoft Visual C++ 4.0 Upg w/Subscr	349.95
7435	Symantec ACT! 2.0 for Windows	1B9.95
22974	Visio for Windows V4	139.95

ACCESSORIES

25034	DPTI-UPS/Viewsonic UPS-420E (Intelligent UPS)	$134.95
16891	Improve Make-it 486	99.95
1305	Targus Universal Ntbk Case *(black)*	69.95
20025	Tripp Lite Super 7 Surge w/Tel.	24.95

INTERNATIONAL CUSTOMERS

Please call 603-446-0003 or fax 603-446-7791. Additional charges & restrictions may apply.

NEW COLOR QUICKCAM!

$199.95*

Purchase Connectix new Color QuickCam to capture still and full motion images and get Internet Valet FREE!

Reg. $29.95

28830

FREE with Color QuickCam purchase!

* Price after $30 mfr. rebate

Hot New Product!

Find any registered Internet domain name in seconds —all on 1 CD-ROM!

ONLY! $29.95

Netscape Navigator Included!

27635

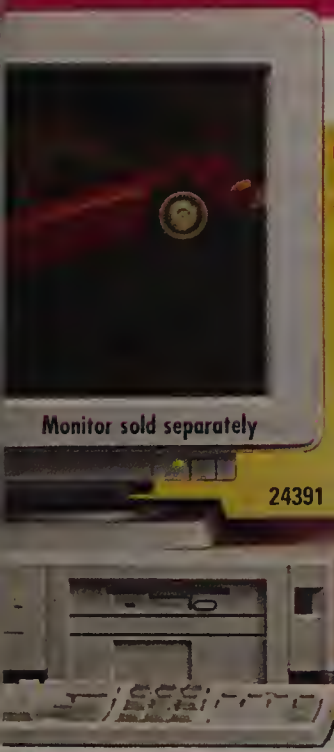
OUR POLICY • VISA, MASTERCARD, AMERICAN EXPRESS, and DISCOVER cards. No surcharge. • All of our products are covered by manufacturer's warranty. • All returns require prior authorization; please call for an RMA • We are not responsible for typographical errors. • Pricing and promotions are subject to change without notice.

Continental U.S. Shipping Charges: $5 per order up to 10 pounds. On orders weighing 10 pounds or more, shipping is $1 per pound. Please call for weight/shipping charge information. Barring events beyond our control, all credit card orders phoned in weekdays by 3 a.m. ET will ship Airborne Express for delivery the next business day. (Some orders ship UPS Ground for next day delivery). Saturday delivery available to many areas upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some areas require an extra day delivery. **APO/FPO, International orders and Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands:** Shipping may require additional time and charges. All other areas: Call 603-446-0003 or FAX 603-446-7791 M-F 9 a.m.-5:30 p.m. ET

©1996 PC Connection, Inc., Marlow, NH. PC Connection & the raccoon characters are registered trademarks of PC Connection, Inc. All other trademarks remain the property of their respective companies.

Connection®

AY DELIVERY • AWESOME SERVICE • BEST PRICING & SELECTION • CUSTOM SYSTEMS OVERNIGHT!



Monitor sold separately

24391

LOW PRICE!

$1349

Prolinea 575E

- 75MHz Pentium
- 8MB RAM, 630MB HD
- Windows95 pre-installed
- 3 Slots/ 3 Bays
- Plug & Play compliant

COMPAQ

Inteva 5x/133-8

- 133MHz, AM5x86 processor
- 8MB RAM, 1.2GB HD
- Windows keyboard
- Microsoft mouse
- Windows 95 pre-installed

Shown w/ optional CD-ROM Drive

SUPER DEAL!

$1049

Inteva

Monitor sold separately

28338

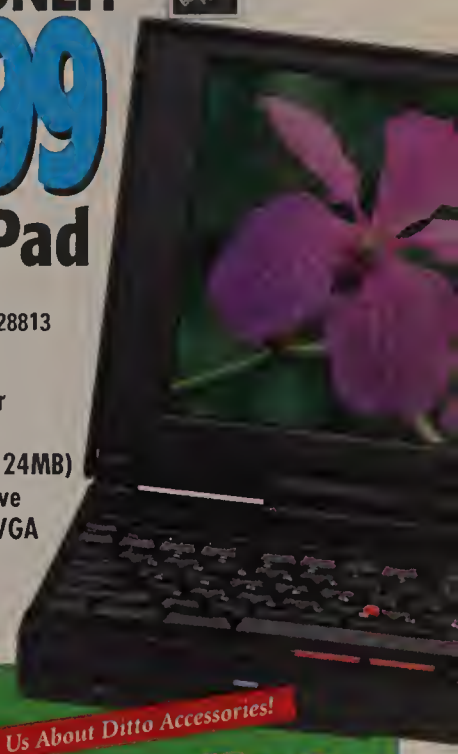
NOW ONLY!

$1999

ThinkPad 365E

28813

- 100MHz Cyrix 5x86C processor
- 8MB RAM (upgradeable to 24MB)
- 540MB hard drive
- ISA bus, 10.4" VGA DSTN display
- NiMH battery



Save Up to $140!

Publisher CD Deluxe, Word—SAVE $60!

ONLY! **$114.95**

26735

ONLY! **$179.95***

*Price after $40 mfr.'s rebate for current users of Word or Excel. Coupon expires 12/31/96

Word, Excel, Publisher CD Deluxe and Bookshelf '95—SAVE $140! 26736

intel NEW!

ONLY! **$379**

28121

Many other OverDrive models available—call for details

120/133MHz Pentium OverDrive Processor

Upgrade your Pentium processor 60 or 66MHz system to 120/133 MHz!

FREE xRes Lite!

Buy Logitech's PageScan Color scanner and get FREE Macromedia xRes Lite! Or upgrade to the full version of xRes for only $90 more!

xRes Lite BUNDLE **$399**

28852

xRes Full BUNDLE **$489**

28856

Ask Us About Ditto Accessories!

Ditto Easy Travan Tape Drive

Super capacity, nearly twice the storage of conventional cartridges!

INTERNAL AS LOW AS **$119.95**

24397

INPUT/OUTPUT

21345	Adesso TruForm Keyboard	$59.95
20050	Caere OmniPage Pro Upgrade	129.95
28641	Casio QV-10A Digital Camera	399.
26603	Cirque Touch N'Tap	39.95
26481	Cirque Wave Keyboard	99.95
27157	Epson Photo PC	499.
25695	Kensington Expert Mouse 5.0	99.95
21279	Logitech Mouse Man Combo	45.95
28081	Wacom ArtPad 2 & Painter 4.0	349.
27905	Xerox TextBridge 96 Upgrade	129.95

NETWORKING

11105	3COM EtherLink III TP	$109.
27762	3COM Office Connect TPO Hub	149.95
26190	Artisoft Lantastic Win95 1-User	89.95
27780	Bay NetGear 8-Port Hub	159.95
21249	Farallon Timbuktu Pro Windows	139.
24366	Intel PRO 100 PCI-8	149.
22228	Lancast 10T Transceiver	27.95
27940	Lite-On 10/100 PCI	139.95
11006	MDS 10-T Adapter	29.95
18994	Novell NetWare 4 1 5-User 3.5"	729
22687	Xircom 28.8 Modem & 10T Ethernet	469.

MULTIMEDIA

16747	ATI Graphics Xpression 1M8	$114.95
27723	C. Labs Blaster CD 8X	249.95
27083	C. Labs Sound Blaster 16 Value Ed PnP	99.95
27722	Diamond Edge 3D 2M8	289.95
26885	Kodak DC50 Digital Zoom Camera	999.
25711	MagInnovision DX15T Monitor	429.
21401	Matrox Millennium 2M8	319.
26815	MDS 8X CD-ROM Drive Internal	199.95
23787	Number Nine Imagine 128	499.
27798	Paradise Tasmania 3D	199.95
21793	Viewsonic 15ES 15" Monitor	399.

GRAPHICS & DESIGN

13109	Adobe Illustrator & Photoshop	$629.95
22197	Adobe PageMaker 6.0	549.95
28693	Adobe Photoshop 3.0/Gallery Effects1,2,3	569.95
22970	CorelDRAW! 6.0 Upgrade from 5	229.95
27558	Corel Graphics Pak	99.95
10873	Deneba Canvas 3.5 Windows	299.95
27568	Fractal Designer Poser—Windows	99.95
24511	HSC Kai's Power Tools 3.0	129.95
28077	Macromedia Director 5.0	869.95
22081	Macromedia FreeHand 5.0 CD	399.95

STORAGE

27347	Conner Filepro 4.2G8 SCSI	$999.
28096	HP 4020 Recordable CD Internal	999.
21947	Sony CSP-920S Recordable CD Internal	999.
22801	SyQuest EZ135 External SCSI	209.95
20636	Western Digital Caviar 1.2G8 IDE	269.

NEW LOW PRICE!

Motorola Lifestyle 28.8 Modem

- 28.8K speed and thoughput up to 15,200 bps
- Built-in error correction, password and callback security
- Plug and play installation

ONLY! **$179.95**

PC WORLD

MOTOROLA LIFESTYLE 28.8

19043

BCS THE BOSTON COMPUTER SOCIETY

Boston Computer Society "Best All Around Company" 2 years in a row!

PC World World Class Award Winner. An unprecedented five times!

WORLD CLASS

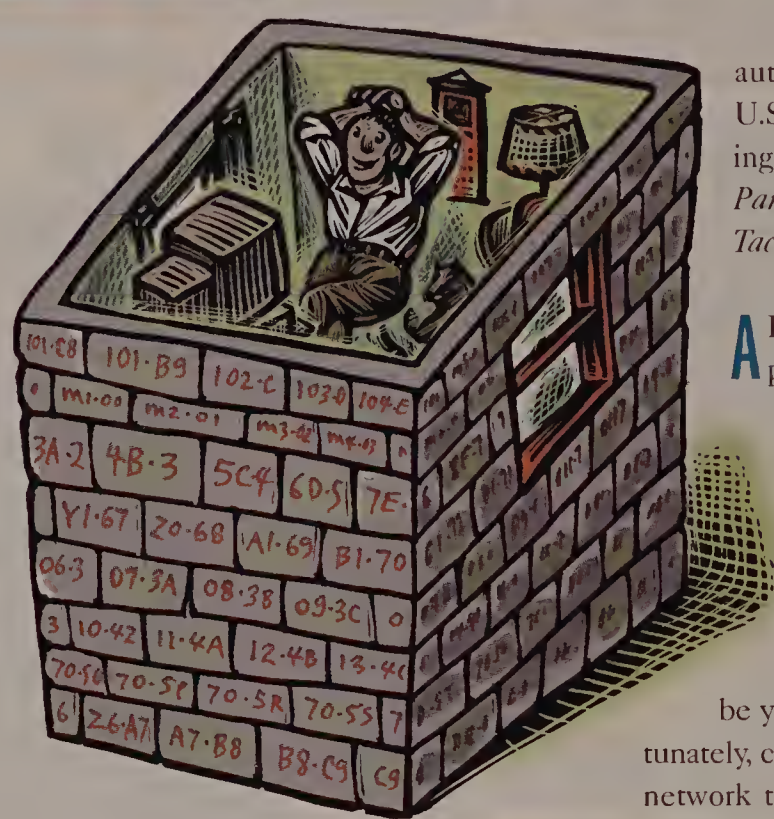
CALL TODAY FREE! Catalog

800-800-0003

OR FAX YOUR ORDER **603-446-7791**

696PCW

HELP LINE Q&A



What Good Is Pretty Good Privacy?

Q Recently, I've heard a great deal about a free program called Pretty Good Privacy. What is it, and how does it work? And what, if any, are the legal implications that a computer user could stumble upon from using Pretty Good Privacy? I've heard that the program's author is in trouble with the U.S. government for distributing it overseas.

Panayotis Koumantaros, Tacoma

A If you're wondering what people will be arguing about when all the hubbub over pornography on the Internet dies down, look no further. The corporate and personal data you store on your computer and send to others should be your private property. Unfortunately, current operating system and network technologies (as well as the law) do little to guarantee your electronic privacy. You may log in to your computer, network, and e-mail systems with a password, but it's almost a sure thing that someone else can read, copy, modify, and even delete your files and messages. Encryption is your best weapon against these snoops.

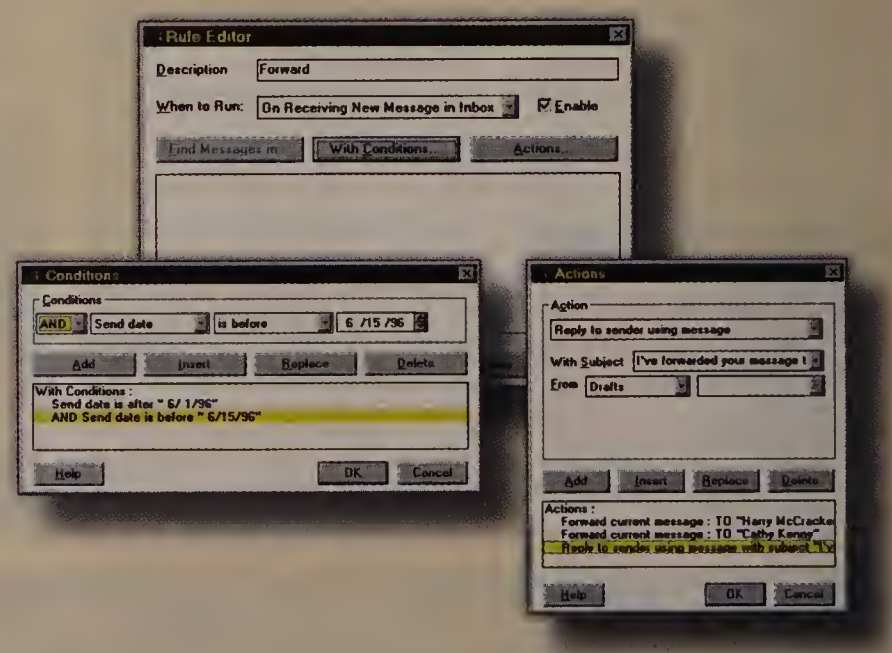
U.S. laws are clear when it comes to your right to privacy in things nondigital: If a law-enforcement agency wants to search your home, read your mail, or tap your phone, it must convince a judge to issue a search warrant. So far, the same rule doesn't apply to electronic mail. Recent court rulings uphold an employer's right to read any e-mail created and transmitted on company-owned equipment, even if the e-mail account is paid for by the employee. Even when you use your own hardware, however, online services and Internet providers are bound only by the honor system to respect the privacy of your mail. And because of the open and distributed nature of the Internet, a determined hacker could find and read almost anyone's mail.

Phillip Zimmerman's Pretty Good Privacy program uses a technique called *public key cryptology*, which lets you encode your messages or hard disk files with a hard-to-break, two-part code. You publish the public half of your encryption key for all and sundry to see (if you read Usenet postings or

Manage Your E-Mail With cc:Mail Rules

You probably spend your first day back from a vacation sorting through e-mail. Much of that work could have been taken care of while you were away, with cc:Mail Rules.

A Rule lets you define an action that cc:Mail should take under certain conditions. You may specify that all messages whose author is your boss and whose subject or text contains the words "or you'll be fired" be moved to a folder named Urgent. Before you leave for vacation, you might specify that some messages be forwarded to your assistant while you're away. Rules can also operate on postings to cc:Mail bulletin boards. You can specify that a Rule run automatically or manually by selecting Rules • Run Rules as Scheduled.



BILL RUSSELL

PC WORLD

63% Savings Plus a Free CD

☐ **Yes.** Send me PC WORLD and my free PC WORLD *Shareware CD-ROM*! I'll pay just $21.97 for 12 monthly issues–63% off the annual newsstand rate.

Also, please rush my FREE CD-ROM!

NAME

COMPANY

ADDRESS

CITY / STATE / ZIP

Please allow 6-8 weeks for delivery of your first issue. Canadian and Mexican orders please add $20 USD per subscription for postage plus 7% GST (#R124669680). All other countries send $65.97 USD to PC World, P.O. Box 55029, Boulder CO 80322-5029. Printed in the USA. Savings based on newsstand rate of $59.40.

4MJA5

PC WORLD

Shareware CD-ROM

Loaded with over 100 great Shareware programs-including complete applications, add-ons, utilities, internet tools and the best in shareware games. This CD-ROM is yours absolutely FREE!

Please Accept Your FREE GIFT!

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD
Subscription Department
P.O. Box 51833
Boulder, CO 80323-1833

subscribe to an Internet mailing list, you've probably seen plenty of these in the signature text at the close of messages). You keep the secret part to yourself. When you want to send a private message, you encrypt it using the recipient's public key, after which only the recipient will be able to decrypt the message with their secret key. You can also use PGP to attach an encrypted code (or *digital signature*) to a nonencrypted file or message, which lets recipients verify that the message really came from you.

The government attempted to prosecute Zimmerman on grounds that by making PGP available to the world on an anonymous FTP site, he knowingly exported the program in violation of a U.S. munitions act (encryption programs are considered military secrets under U.S. law). But the FTP sites that currently provide the program block the file from being downloaded to non-U.S. destinations. And in January, the government dropped the case.

If you're a U.S. or Canadian resident (both countries have similar encryption-export controls), you can download the program for free from the Massachusetts Institute of Technology's PGP distribution page on the Web (http://web.mit.edu/network/pgp.html).

If you live in another country, or for some reason MIT's page doesn't think your domain name originates in the United States or Canada (it didn't like my Microsoft Network e-mail address), you can probably find a copy elsewhere using your favorite Web search engine, or check the Where to Get the Pretty Good Privacy Program FAQ document (ftp://ftp.netcom.com/pub/mp/mpj/getpgp.asc). You'll also find a wealth of how-to information online: Some of my favorite PGP-related sites are the Pretty Good Introduction to PGP page (http://www.gulf.net/~ken/pgp.html), a page offering an online PGP manual (http://vinca.cnidr.org/software/pgp/pgp.html), and Aegis Research's freeware PGP Windows Shell page (http://iquest.com/~aegisrc/utils2.shtml).

You may also be able to find it on commercial online services: I found it on the Microsoft Network in the Communications section of the DOS Shareware Libraries page (go sharewarefiles; the file is free), but not on America Online. You can download PGP from CompuServe's NCSA InfoSecurity Forum (go ncsafo): Search for the keyword pgp in the forum's library, select *PGP Library (Lib 12) Access Request Procedure* from the resulting list to download export.txt, then follow the instructions in that file.

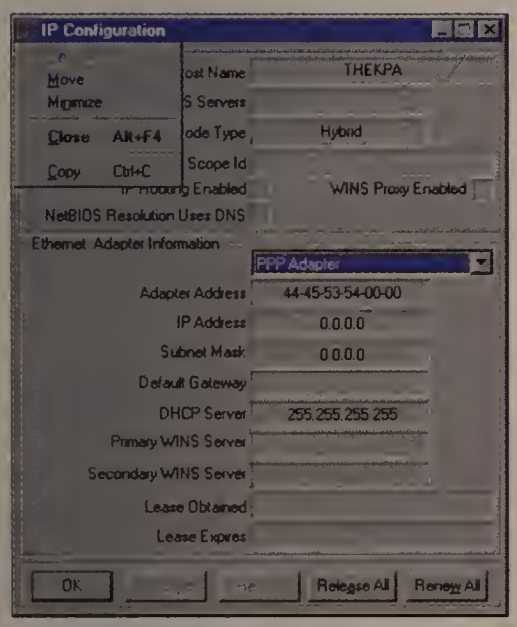


FIGURE 1: COPY DIAL-UP NETWORKING SETTINGS to a safe place, so you can restore them easily in case they're lost.

Save Your Windows 95 TCP/IP Configuration

Q When installing Microsoft's Internet Explorer I had to answer a lot of questions to get my modem connected to my Internet provider. I managed with some difficulty to supply all the answers, and now my dial-up connection is working great.

Now I'd like to record all those set-

Find Answers Fast

1-2-3
- graph every *n*th value 252
- printing problems 254

Access 266
America Online 270
Ami Pro 258
Approach 266
cc:Mail 248
DOS
- connect to LAN printers 250
- gaming under Windows 95 264
- printing in Edit 250

Excel
- average selectively 252
- graph every *n*th value 252
- multisheet reports 252

Memory
- transplanting SIMMs 278

Paradox 266
PKZip 250
Privacy on the Internet 248
Quattro Pro 252
Surge suppressors 280
Windows 3.*x*
- change file attributes 260
- exiting problems 262
- File Manager 260

Windows 95
- customizing 262
- DOS games 264
- replace start-up screen 250
- save TCP/IP configuration 249
- uninstall problems 260
- WordPad Toolbar 262

Word for Windows
- create banners 256
- customize page numbers 258

WordPerfect
- capitalization turn-off 258

World Wide Web
- add clip art 270
- clean up cache files 272
- Windows 95 shortcuts to pages 274

tings so that I can easily restore them if they accidentally get wiped out. Can I display and save these settings to a file?
Don A. Dudley,
Fond Du Lac, Wisconsin

A Though it doesn't display your mail settings, the undocumented Windows 95 IP Configuration program (see **FIGURE 1** on the previous page) gathers your TCP/IP settings in one place and lets you copy them to a text file.

To launch the program, select *Start•Run* and type **winipcfg** in the Open field. Click the *More Info* button, then select *Copy* from the drop-down Control menu (the one on the left side of the program's title bar). Now you can paste the contents into a text or word processing document. If you don't keep regular file backups, copy the file to a floppy and place it with your other important installation disks, or print it out and file it somewhere where you can find it in an emergency.

Push DOS Edit Text to the Right

Q When I print certain files from DOS's Edit program, I'd like the pages to have a wide left margin so that I can insert them in a binder. Is there a way to make Edit begin printing in a column other than column 1?
Richard Schapker,
Santa Barbara, California

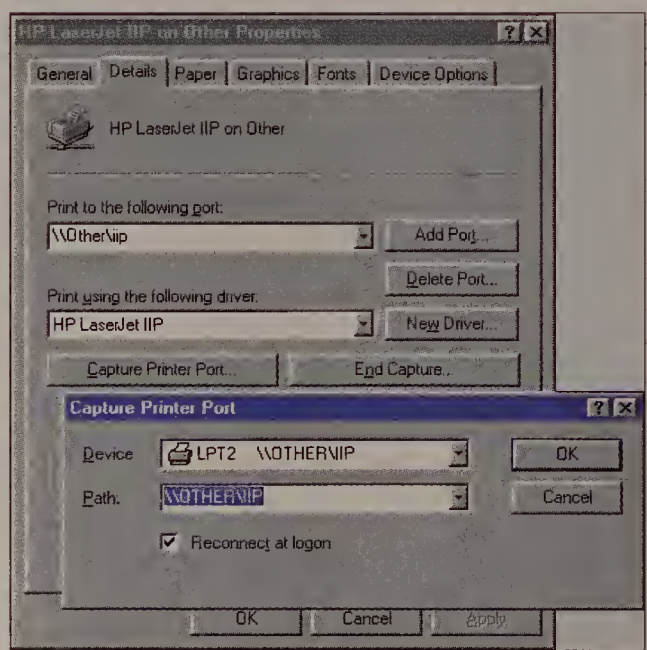


FIGURE 2: ASSIGN NETWORK PRINTERS to a local LPT or COM port (so DOS programs can see them) by using Windows 95's Capture Printer Port setting.

A Sorry, the Edit program doesn't have margin or column settings, but you can get the same effect by indenting text. Select the text that you want to indent, then press **<Tab>**. To unindent selected text, press **<Shift>-<Tab>**. The only drawback to this technique is that as you push text to the right, it goes off the page. If editing long lines manually isn't an option for you, try selecting a narrow font on your printer.

Select a Page of ASCII Text

Q Do you know of a way to print a specific "page" from an ASCII file? For instance, if I needed to print only page 73, how would I do it?
Josh Messenger, Lancaster, Texas

A Open the file in DOS's Edit program, select the text you want to print, choose *File•Print*, then click *OK* to accept the default 'Selected Text Only' option.

Connect DOS Programs to LAN Printers Under Windows 95

While we're on the subject of printing from DOS programs, have you tried printing from your favorite DOS application to a network printer? Win 95 makes it pretty easy to print to your neighbor's printer over the network—if you're using a Windows application. DOS programs, bless them, can print only to a local LPT or COM port; they've never heard of a printer called Ann's Laser.

To assign the remote printer to an unused local port that DOS can see, select *Start•Settings•Printers*, right-click the printer's icon, choose *Properties*, click the *Details* tab, then click *Capture Printer Port* (**FIGURE 2**). Choose an unused printer port from the Device list, and enter the path to the printer in the Path field. To make the link permanent, check *Reconnect at logon*.

Windows Start-Up Logo Doesn't

Q Tip 31 in the January article "95 Essential Tips for Windows 95," which describes how to replace Windows 95's start-up screen with your own, sounded great. But when I tried it, I had no luck. Not only does my custom logo fail to appear, but Win 95's clouds-and-blue-sky default screen is gone too. The logo.sys bit-mapped file I created (143,158 bytes in size) is in my root directory where it belongs, and I'm afraid I've overwritten Win 95's default start-up bit-mapped file.
Robert Crawford, Colborne, Ontario

A The logo.sys file has to be exactly 129,078 bytes, or else Windows will skip it. Load your .bmp file into Paint and scale it down to 320 by 400 pixels with the Image•Attributes command.

Windows' own default start-up bit map doesn't exist as a separate file; it's embedded in the io.sys system file. If you want Microsoft's clouds to reappear, remove your logo.sys file from the c:\ directory. The bit map will appear the next time you start Windows 95.

Save a Step in Multidisk Zip Restores

PKWare's PKZip program offers a command-line parameter (-&) that lets you archive a large file onto multiple floppies. When you go to unzip that file, you probably start with disk 1 in the floppy drive. When you then issue the pkunzip command, PKZip asks for the last floppy in the set (to make sure there's enough room on the target drive to extract the data, I assume). When it's satisfied that the file extraction is going to work, it asks for disk 1 again. I found a trick that saves a step: Instead of starting with disk 1 in the drive, place the last disk in the floppy drive. PKZip will read the necessary information from the disk, ask for disk 1, then proceed with the remainder of the file operation.
Russell Smith, Abilene, Texas

By Scott Spanbauer

Scott Spanbauer is a contributing editor for PC World *and a coauthor of* The No B.S. Guide to Windows 95 *(No Starch Press, 1995, 800/420-7240).* Help Line *welcomes your questions and tips and pays $50 for published items.* *See page 14 for contact information.*

There Is Only One Choice For Data Compression.

PKZIP® for Windows

The growth of the Internet and the increased use of World Wide Web browsers is creating a greater need to compress data files. Saving disk space and saving on-line phone charges are big benefits of compressing data files with ***PKZIP® for Windows***. PKZIP for Windows compresses files an average of 50-70% with many large text and database files compressing well over 90%. PKZIP's simple point-and-click interface lets you easily compress one file or all files on an entire hard drive, and store them in the .ZIP file. PKWARE® provides the best and fastest data compression technology on the market, try it and see!

PKZIP for Windows allows you to easily open files created with PKZIP for DOS Version 2.04g. PKZIP is also compatible with Windows 3.1 or higher and Windows 95.

Use PKZIP compression whenever you are:

At Home
The Internet contains many .ZIP files you can access through a World Wide Web browser. PKZIP also lets you archive files such as the digitized family photo album or annual budget in .ZIP files, saving you space on your hard drive.

On the Road
Use .ZIP files when sending email, storing presentations, or transferring files between your office PC and your laptop.

At the Office
Network and system administrators save space on their servers and reduce traffic over the intranet or corporate network using .ZIP files.

Data compression is as important now as it was when hard drives were small and modems were slow. New software applications and the files they create continue to grow in size. Intranet and Internet traffic are growing at a phenomenal rate. These growing trends make zipping and unzipping data files an important utility for everyone who uses a personal computer.

PKZIP for Windows $49, PKZIP for DOS $47 plus shipping and handling.

To order call (414) 354-8699
or visit our Web Site http://www.pkware.com

Other PKWARE Products

Put Your Executables on a Diet

PKLITE™ increases your valuable disk space by compressing DOS and Windows 16-bit executable (.COM, .EXE and .DLL) files by an average of 45%. The operation of PKLITE is transparent, all you will notice is more available disk space! Price $46

Software developers, save disk space and media costs with smaller executables. You can distribute your software in a compressed form with PKLITE Professional.™ PKLITE Professional gives you an extra option to compress files so that they cannot be expanded by PKLITE. This discourages reverse engineering of your programs. Price $146

Put Compression Into YOUR Application

The PKWARE Data Compression Library® products allow you to incorporate data compression technology into your software applications. The application program controls all the input and output of data, allowing data to be compressed to or extracted from any device or area of memory.

The all-purpose Data Compression Algorithm compresses ASCII or binary data quickly. The routines can be used with most compatible language compilers. Separate DOS, DOS32, Windows, OS/2, Win32 and UNIX versions are available! Call for pricing.

PKWARE® INC.
The Data Compression Experts®
9025 N Deerwood Drive / Brown Deer, WI 53223 USA
FAX. 414-354-8559 BBS: 414-354-8670
Email: info@pkware.com

1996 Government Computer News
Best New Product Award at FOSE Finalist
1995 Computer Currents Readers Choice Award
1992-1995 PC Computing World Class Award
1993 Shareware Industry Award
1992 Premiere Computing Magazine Award
1992 Dvorak/Zoom Award

PCW-696

Copyright 1996 PKWARE, Inc. All Rights Reserved. All trademarks or registered trademarks are property of their respective owners.

Circle 212 on reader service card

SPREADSHEETS Q & A

Graph Every Nth Value in Any Spreadsheet

Q I use a Quattro Pro worksheet to track the number of items shipped from our warehouse each month. I'd like to be able to quickly produce a graph that plots the number shipped for every third month. I'd also like to be able to specify the interval. How would I set this up?

Bob Blanchard, Eugene, Oregon

A I've come up with a solution that works in any spreadsheet, though some of our ingenious readers may be able to suggest a more efficient model based on Quattro Pro's array formulas. In this scheme, the complete set of data is in range A1..B24; the values you want to graph are in range F3..G8, and values you enter in cells E1 and E3 control the starting month and the graph interval.

To set up the model in Quattro Pro, 1-2-3, or Excel, follow the steps outlined below and illustrated in **FIGURE 1**:

1. Enter the data and labels shown in range A1..B24.

2. Enter the labels shown in cells D1 and D3 and interval and start values in cells E1 and E3. If you want to start with the data from January 1995, enter a start value of **0** in cell E3.

3. Enter the formula **+E3+$E$1** in cell E4 and copy it to range E5..E8.

4. Enter **@index($A$2..$B$24,0,$E3)** in cell F3 and copy it to range F4..F8. Assign a Date format to range F3..F8. If you're working in Excel, enter the formula **=index($A$2:$B$24,$E3+1,1)** in cell F3 and copy it to F4:F8.

5. Enter **@index($A$2..$B$24,1,$E3)** in cell G3 and copy it to range G4..G8. If you're working in Excel, enter the formula **=index($A$2:$B$24,$E3+1,2)** in cell G3 and copy it to G4:G8.

6. Select an empty cell, then click the graph tool and draw an empty graph on your worksheet. Right-click the empty graph and choose *Series* from the menu. Specify **F3..F8** as the *x*-axis range, **G3..G8** as the first data range, and click *OK*. Now double-click the graph, right-click the *x*-axis and choose *X-Axis Properties*. In the resulting dialog box, click the *Numeric Format* tab, click the *Date* button, select the *MMM-YY* format, and click *OK*.

Here's how the model works: The values in range E3..E8 are indexes that determine which numbers will be plotted on the graph—the second, fourth, sixth, and so on. You enter the first one (in cell E3), and the rest are generated by the formulas in range E4..E8.

The formulas in F3..G8 use the indexes in column E to pick out the data in columns A and B. For example, the formula in F3, @index($A$2..$B$24, 0,$E3), returns 672, the item in column 0 (column A) and the second row of range A2..B24 (that's cell A4, since cell A2 is in row 0).

Select and Graph a Subset of Your Data

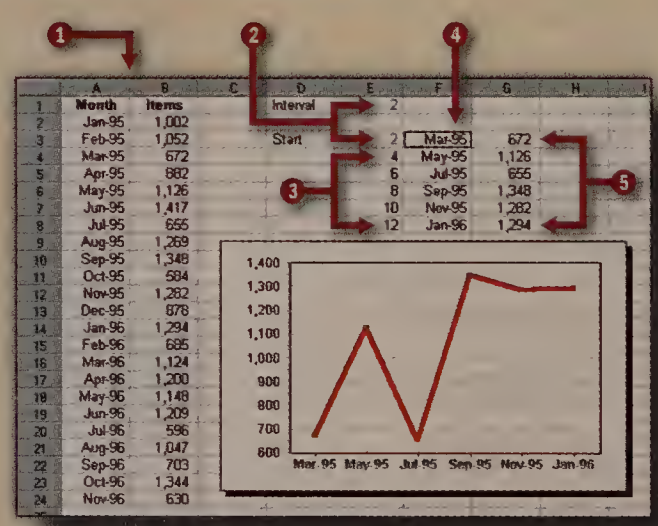


FIGURE 1: FORMULAS IN COLUMNS F AND G select data from columns A and B, based on interval and start values that you enter.

Change Low Values Before Averaging in Excel

Q I record my students' grades in an Excel worksheet, then average each student's individual grades to get their grade for the class. It works very well, but I still have one problem: How do I enter grades that are below 50 percent, but then average them as if they were 50 percent?

Barry Spadea, Riverside, Rhode Island

A I could have used a teacher like you when I was struggling through calculus! The solution to your problem is an array formula with an if function that selectively changes all of the grades below 0.5 to 0.5, then averages the resulting array.

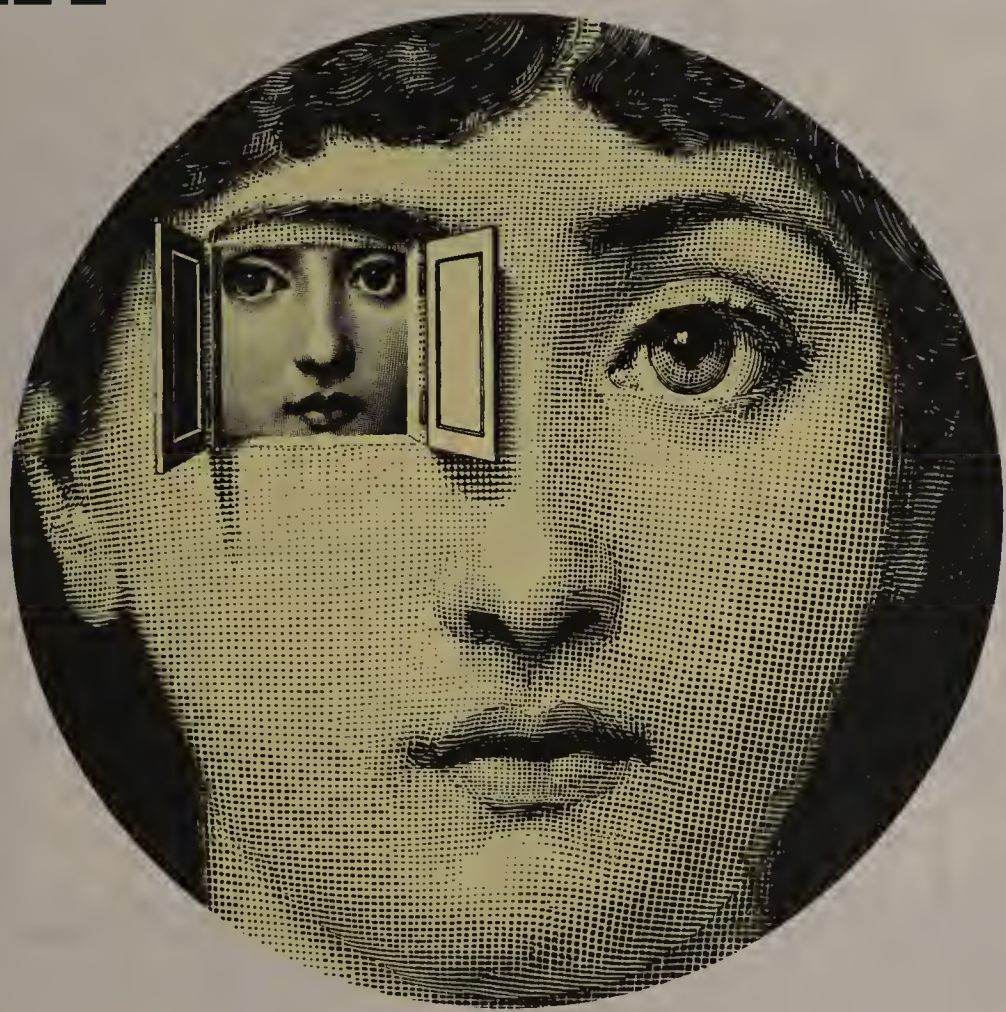
Suppose your grades have been entered in A1:A16. Then the formula you need is **=average(if(A1:A16<0.5,0.5,A1:A16))**. Be sure to press **<Ctrl>-<Shift>-<Enter>** to enter the formula as an array.

Printing Multisheet Reports in Excel

Q I'm having problems printing a report from a 50-sheet Excel 5.0 worksheet. Each sheet outputs several pages, and I want every page to have the same column headings.

To print the report the way it's set up now, I have to select each sheet, insert a row at the top, copy a set of column headings onto the row, define the print

DIGITAL AND MICROSOFT ANNOUNCE A WAY TO HELP YOUR COMPANY MERGE WITH ITSELF.



It's called Windows-based enterprise computing. And it's designed to give your company the greatest competitive advantage of all: a unified vision. Imagine seamlessly sharing information—top-down, bottom-up, across your organization and beyond it—with the ease and familiarity of Windows.® And without worrying which computer happens to hold the data. It's no futurist fantasy—it's happening right now. The Alliance for Enterprise Computing delivers the powerful and integrated Microsoft® Windows NT™ and BackOffice™ platform, joined with Digital's systems and global service-and-support network. The result: dependable, flexible, open computing solutions. To align your company with its vision, call 1-800-332-4403, visit the Alliance Web site at http://www.alliance.digital.com or send e-mail to alliance@digital.com.

Microsoft® digital™

ALLIANCE

FOR ENTERPRISE COMPUTING

ABX

©1996 Digital Equipment Corporation. Digital and the DIGITAL logo are trademarks of Digital Equipment Corp. Microsoft, the Microsoft logo and Windows are registered trademarks and Windows NT and BackOffice are trademarks of Microsoft Corporation. Artwork ©Fornasetti

Circle 82 on reader service card

```
'Make array item numbering begin with 1
Option Base 1
Sub SheetHeads()
    'Define variables
    Dim ColumnHeads As Range
    Dim RowNumber As Integer
    Dim SheetList(3) As Variant
    Dim SheetName As Variant
    'Indicate which row should contain titles
    RowNumber = 1
    'Indicate the target sheets that will get titles
    SheetList(1) = "Sheet2"
    SheetList(2) = "Sheet3"
    SheetList(3) = "Sheet4"
    'Indicate which sheet has the original titles
    Set ColumnHeads = Worksheets("Sheet1").Rows(RowNumber)
    'Do this once for each target sheet
    For Each SheetName In SheetList
        'Put the column headings into the clipboard
        ColumnHeads.Copy
        'Insert the copied cells, and set the page titles
        With Worksheets(SheetName)
            .Rows(RowNumber).Insert Shift:=xlDown
            .PageSetup.PrintTitleRows = Rows(RowNumber).Address
        End With
    Next
End Sub
```

FIGURE 2: GIVE EVERY PAGE OF AN EXCEL REPORT the same format by running this macro, which utilizes a Visual Basic array.

titles so that the column headings will appear on every page, and then print. Could I automate this with a macro?
Ken Aigen, San Francisco

A But of course! I recommend using a macro to copy the column headings and define the print titles, then, after you've checked over the results, using the Report Manger add-in to handle the actual printing.

After a little tinkering, I came up with the macro shown in **FIGURE 2**. It exemplifies one of the more powerful features of Visual Basic—the array. (The macro is available on PC World Online as 6ssfig2.xls.)

Not to be confused with a worksheet array or array formula, a Visual Basic array is a variable that stores a set of values, each denoted by an index value. For this problem, I used an array to store the names of the sheets that are to receive copies of the column headings. The macro loops through each sheet in the array, copies the column headings onto it, and sets the print headings.

To set up the model, begin by entering some dummy data. On sheet 1, enter labels into row 1 to serve as column headings, and fill in some data underneath the headings. Enter or copy similar data (but leave out the column heads) onto sheets 2, 3, and 4.

Now create the macro. To do this, select *Insert•Macro•Module*, then enter the statements in Figure 2. You can leave out the green comment lines, which begin with apostrophes. To execute the macro, select *Tools•Macro*, select *SheetHeads* from the dialog box that results, and click *Run*.

Once you've run the macro, be sure to check each sheet to confirm that everything looks fine, and select *File•Print Preview* to verify that they'll print correctly. If you need to adjust column widths, select all the sheets in the file at once to make sure they're consistent.

To print all the sheets, you can use Excel's Report Manager add-in. First check to see if it's been attached: Select *Tools•Add-Ins*, and make sure *Report Manager* is checked.

Now, select *File•Print Report*. In the Print Report dialog box, select *Add*, then in the Add Report dialog, click *Sheet1* in the Sheet list and click *Add*. Repeat the process for sheets 2 through 4. Then enter a report name and click *OK*. Because of a bug in Excel, 'Page 1' appears in the footer of each page, even when you check *Use Continuous Page Numbers*.

To print the report, select it in the Print Report dialog box, click *Print*, then click *OK*.

Printing From 1-2-3 release 4.0 for DOS in Windows 95

Q Here's a strange problem: I'm trying to run my DOS version of 1-2-3 under Windows 95, and almost everything seems to work okay, except that I can't print anything! When I try to use the Wysiwyg :Print command, I get an error message. I've got an HP LaserJet 5P and a Pentium with 16MB of memory, for crying out loud! What gives?
Peter Milham, Calabasas, California

A It's not so strange, really, when you consider that a program with a memory footprint the size of 1-2-3 fits into DOS about as well as my brother's size 13 feet fit into my size 9 sneakers. Without enough extended memory, 1-2-3 simply refuses to print. (Incidentally, this problem can also occur when you're running 1-2-3 under DOS 3.*x*.) But it's not enough to simply allocate more memory to 1-2-3's DOS session; you must also tell 1-2-3 that it's okay to use that memory.

We'll create a Shortcut on the Windows 95 desktop to launch 1-2-3 with enough extended memory to print (2MB), and a batch file to allocate the memory to 1-2-3 when you launch it.

Right-click on your desktop, and select *New•Shortcut* from the pop-up menu. Click *Browse*, navigate to the directory that contains your 1-2-3 program (by default, that's C:\123R4D), and select *123.exe*. Click *Next*, specify a name for the Shortcut, click *Next*, specify an icon, then click *Finish*, and you've got a new Shortcut. Now, launch the Windows Notepad, and enter the following command:

set 123memsize=2048

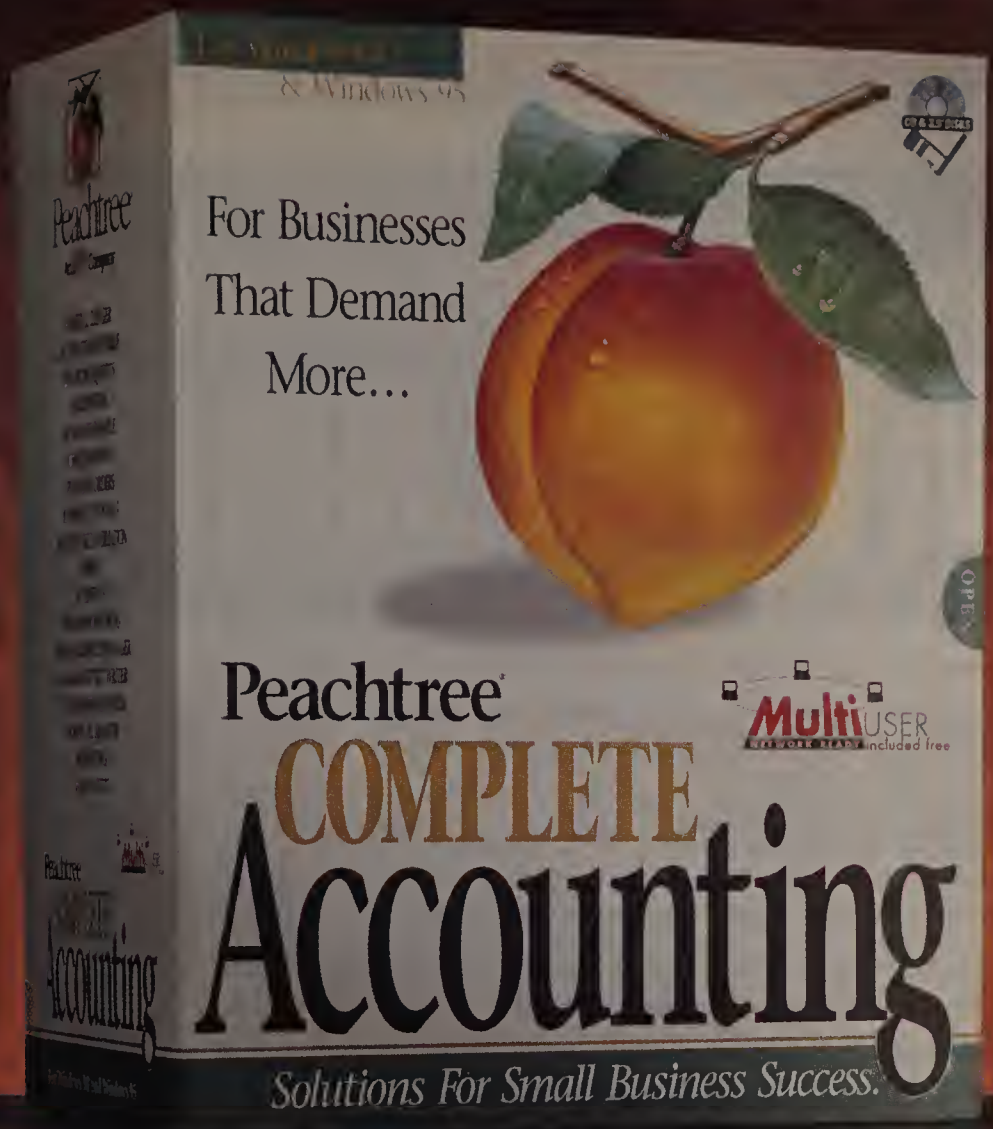
Save this file in your 1-2-3 directory as **memset.bat** and exit Notepad.

Next, right-click your new Shortcut and select *Properties* from the menu. Click the *Program* tab, and in the Batch file field, enter the command **c:\123r4d\memset.bat**. Click *OK*.

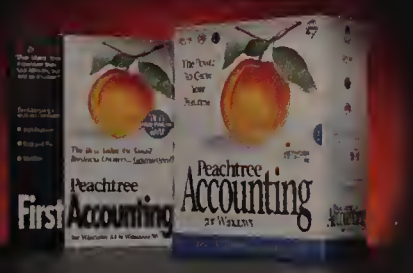
To launch 1-2-3, double-click your Shortcut. In 1-2-3, select */Worksheet•Status*. You'll see that Windows has allocated the better part of 2MB of memory to 1-2-3, and your printing problem should be fixed.

By Richard Scoville

PC WORLD online *The file mentioned in this article is available on PC World Online. Richard Scoville is a contributing editor for* PC World *and a software training consultant based in Chapel Hill, North Carolina.* Spreadsheets *welcomes your questions and tips and pays $50 for published items. See page 14 for contact information.*



Peachtree Complete. The Big Solution For Small Business.



Introducing the newest and biggest solution for small business yet — Peachtree Complete Accounting for Windows. Whether your business has one person or fifty, Peachtree Complete is so comprehensive, it's sure to answer all your accounting needs. . .and more! Complete is packed full of powerful features to help you manage your business, such as General Ledger, Sales and Receivables, Accounts Payable, Inventory, and Payroll. And we've integrated features that make Complete truly unique. Features like Sales Orders to help you with backordering and partial shipments, and Job Costing which allows you to compare estimated job costs to actual costs. There's even a new Fixed Assets module to make your life easier by helping you with those depreciation and tax issues. With this latest addition, it's easier than ever to choose the Peachtree product that is right for you. From the incredible value of First Accounting, to the business building features of Peachtree Accounting, to the comprehensive solutions of Peachtree Complete, you'll find that Peachtree is perfect for helping you solve your not-so-small, small business problems.

Circle 223 on reader service card

Peachtree®
An ADP Company

Office DEPOT · OfficeMax · EGGHEAD · ELEK-TEK · STAPLES · MICRO CENTER · BEST BUY · COMPUSA

Solutions for Small Business Success

Call 1-800-428-9989 or visit us online at http://www.peach.com for the right Peachtree solution.

WORD PROCESSING Q&A

Put Your Message on a WinWord Banner

Q Can I create a banner in Word for Windows 6.0, then print it on a laser printer? How would I go about it?
Milton Feldon,
Laguna Hills, California

A It's certainly possible, but you'll have to print the banner on several pages and tape them together, since laser printers can't accept continuous forms. Follow the steps outlined below and illustrated in **FIGURE 1**.

1. In a new file select *File • Page Setup*. Click the *Margins* tab in the Page Setup dialog box, and change all margins to 0.5 inch to allow the maximum space for your message.

2. Click the *Paper Size* tab and select *Landscape* in the Orientation frame.

3. Click the *Layout* tab and choose *Center* from the Vertical Alignment list. Click *OK*.

4. To see how the banner is progressing, you'll want to view two pages at a time. Make sure you're in Page Layout view, select *View • Zoom*, then select *Many Pages* in the Zoom To list. Click the button just below this list, drag the mouse to highlight the top two pages in the drop-down box, and release the mouse button. Click *OK*.

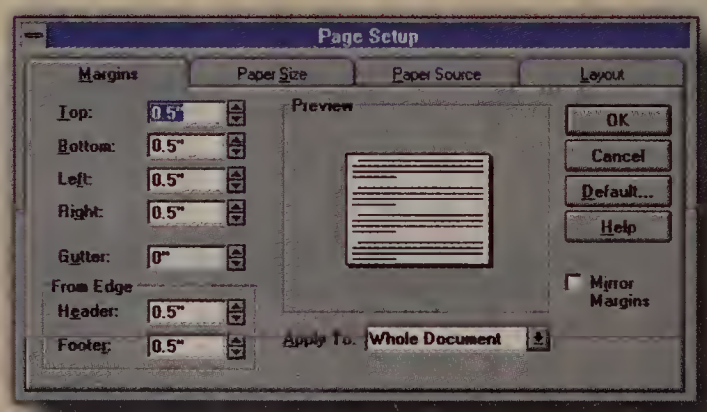
5. Choose a typeface from the *Font* drop-down list on the toolbar, then double-click in the toolbar's font size box and enter a large number. A good starting point is 288, which produces letters that are 4 inches high (1 inch equals 72 points), but you can adjust the size to suit your needs.

6. Now, type your message, but don't press <Space> between words or you'll end up with large gaps. Instead, press **<Ctrl>-<Shift>-<Space>** to insert nonbreaking spaces. Word displays the banner as it will print on each page. Since you're working with such a large font, word breaks between pages won't be correct, but you can trim the pages after printing, then tape them carefully together.

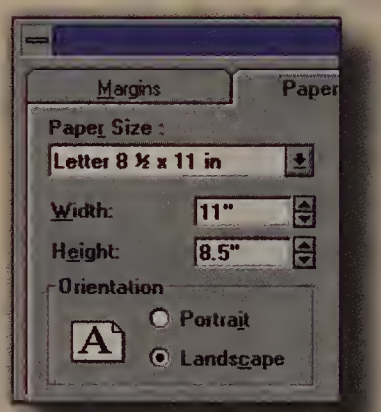
Once you're finished, be sure to save this banner as a document so you can use the basic layout again without going through all these steps.

Raise Your Banners High With Word for Windows

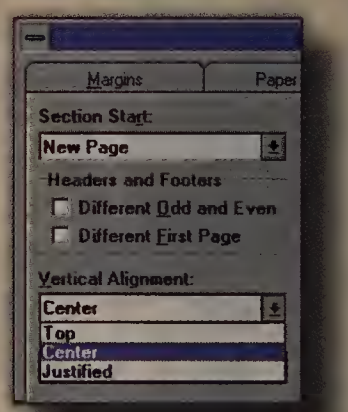
❶ First, select View • Page Layout, then File • Page Setup. Change all margins to 0.5".



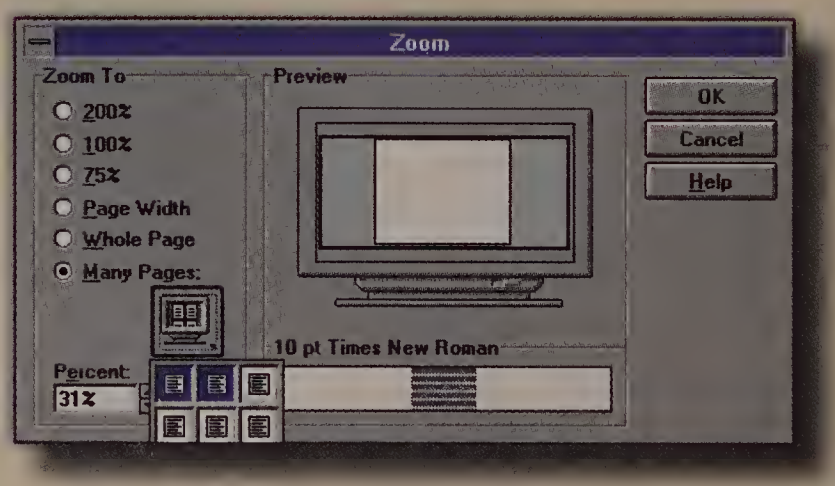
❷ Select Landscape orientation.



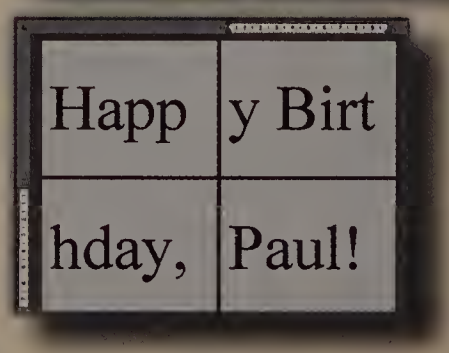
❸ Select Center in the Layout tab's Vertical Alignment list.



❹ Select View • Zoom • Many Pages, click the adjacent button, and choose to view two pages at a time.



❺ Pick a large font size.



❻ Type your message, pressing <Ctrl>-<Shift>-<Space> between words.

FIGURE 1: CREATING A BANNER ON A LASER PRINTER is relatively easy once you learn a few WinWord formatting tricks.

Think Performance. Think Price.
THINK INSYNC.

GET EVERYONE ON LINE WITHOUT ADDING PHONE LINES

ModemShare lets everyone on your network share modems and phone lines to access the Internet, transfer files, and fax documents. There's no more waiting to use the only modem-equipped PC in the office. And because ModemShare eliminates the need for additional phone lines, you can save thousands of dollars per year.

ModemShare works with any Windows 95, Windows or DOS PC on *any* network. What's more, it's backed by a company that's been a leader in network solutions for over 12 years.

So if you want to save money and increase productivity, get ModemShare. And get INSYNC. **ONLY $129**

REMOTE ACCESS FOR AN EASY ACCESS PRICE

Now you can access the resources you need no matter where you are. With CoSession Remote you can connect to distant PCs and work just as if you were there. Run programs, check e-mail, transfer files, access data, print reports. You can even use CoSession Remote over the Internet to avoid long distance phone charges.

And with industry-leading features like high-speed Intelligent File Transfer and Windows 95, Windows and DOS support, it's no wonder that CoSession Remote is the most widely used remote product around.

So if you want reliable, intelligent remote access at a price that's easily within reach, get CoSession Remote. And get INSYNC. **ONLY $79**

Over 4.5 Million Installed!

Call 1-800-200-7455
www.artisoft.com

Artisoft

©1996 ARTISOFT, INC. All rights reserved. Artisoft and INSYNC are registered trademarks, and CoSession Remote and ModemShare are trademarks of Artisoft Inc. Windows is a registered trademark of Microsoft Corporation.

Circle 21 on reader service card

INSYNC®

Making The World Your Office

Customize Page Numbering in WinWord

Q My documents need page numbering that shows the current page plus the total number of pages in the document, as in "1 of 4, 2 of 4," and so on. Can you tell me how to do this in Word for Windows?

Mark Knutson, Bellingham, Washington

A The process is fairly simple, and it works in both WinWord 6.0 and 7.0. Just follow the steps below.

1. Press **<Ctrl>-<Home>** to move to the first page of your document, and select *View•Header and Footer.*

2. Click the Header and Footer toolbar's leftmost button to move to the document's footer.

3. Select *Insert•Field.* In the Field dialog box, select *All* in the Categories list, then select *Page* in the Field Names list. Click *OK.* WinWord will insert the number 1 in the footer area.

4. Press **<Space>**, then type **of**, and press **<Space>** again.

5. Select *Insert•Field*, select *NumPages* in the Field Names list, and click *OK* to insert the second half of your page numbering scheme.

6. Click *Close* on the Header and Footer toolbar to return to editing.

7. To make sure the numbers get updated in this and other documents before they're printed, select *File•Print•Options* and select the *Update Fields* check box. Then click *OK* and *Close* to make this setting the new default.

Note that the second number in your new page numbering system will not automatically be updated as you edit the document. It will print correctly, however, and will be updated each time you open the document.

To update fields at any other time, select *View•Header and Footer,* click the leftmost button on the toolbar, highlight the footer text, press **<F9>**, and then click *Close.*

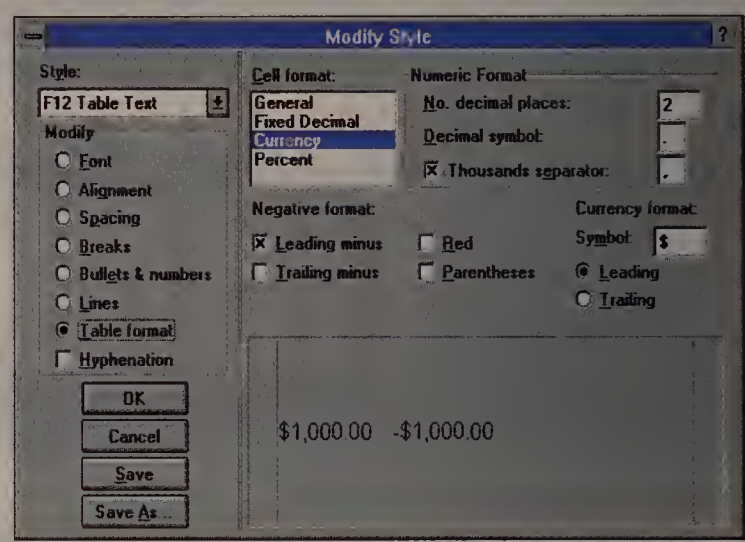


FIGURE 3: FORMAT NUMBERS IN AMI PRO TABLES—as currency, for example—by modifying the Table style.

Turn Off Automatic Capitalization in WordPerfect

Q I like WordPerfect 6.1, except for a couple of its annoying habits. The one that bothers me the most is its insistence on capitalizing the first letter following a period. That's just fine, except when I'm typing an abbreviation or a punctuated acronym. How do I shut this feature off?

Stephen Greenberg, Austin, Texas

A You're not alone in your dislike for this feature. Automatic features are useful, but they're not always as smart as they should be. In any case, you can turn off WordPerfect's autocapitalization feature quickly.

Select *Tools•QuickCorrect*, and click the *Options* button. In the QuickCorrect Options dialog box (shown in **FIGURE 2**), click *Capitalize First Letter* to turn the feature off. Click *OK*, then click *Close.* That's all there is to it.

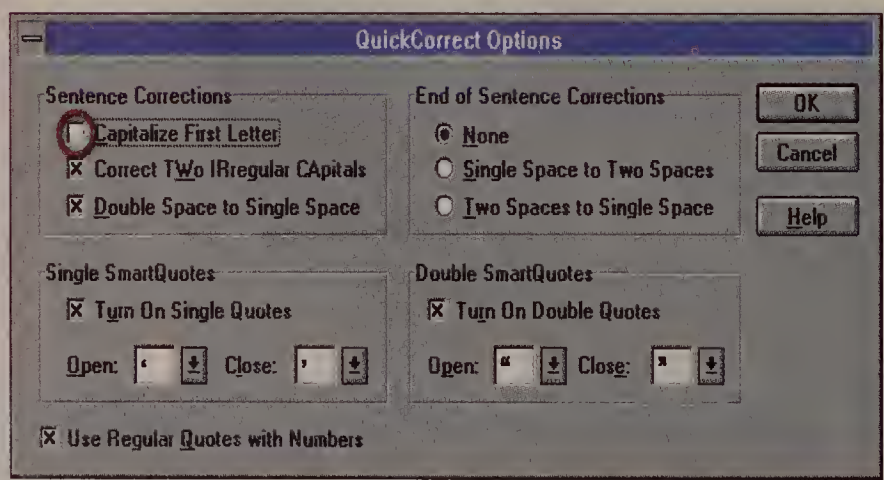


FIGURE 2: TURN OFF A WORDPERFECT QUICKCORRECT FEATURE, such as Capitalize First Letter, by deselecting it in this dialog box.

Format Numbers in Ami Pro 3.1 Tables

Q I use Ami Pro tables to do sales reports, and I need to format the data as currency. Can I set this up so I don't have to type dollar signs and zeros?

John Rudzinski, Sterling Heights, Michigan

A There's a way to handle this, once you're familiar with Ami Pro's method of using styles to set numerical formats in tables. Here's how to format your currency values:

1. Open a document with a table, place the cursor in any table cell, then select *Style•Modify Style* (see **FIGURE 3**).

2. In the Modify Style dialog box's Modify list, click *Table format.* The options on the right side of the dialog box change to numerical formats.

3. Choose *Currency* in the Cell Format list. Click *Save*, then click *OK.*

4. If you want to save this change, select *Style•Save as a Style Sheet.* Make sure the With Contents box of the Save as a Style Sheet dialog box is not marked, then click *OK* and click *Yes* to confirm that you want to overwrite the existing style sheet, or enter a new style name and description.

Close the file you opened in step 1. From now on, whenever you open a document with this style sheet, numerical values entered in a table will automatically take on the currency format. Normal text entered in other table cells will be unaffected by this change.

By George Campbell

George Campbell is a contributing editor for PC World *and a contributor to* The PC Bible *(Peachpit Press, 1995, 510/548-4393).* Word Processing *welcomes your questions and tips and pays $50 for published items. See page 14 for contact information.*

"SUPER ACCOUNTING"

PC WORLD MAGAZINE, January 96

New DacEasy® Accounting & Payroll 95

Why have the experts been busy thinking up new words to praise DacEasy Accounting & Payroll 95? Maybe it's because the customizable interface gives you accounting flexibility that no other system can match. DacEasy not only helps your business grow, it grows with your business!

Faster Than a Speeding Bullet

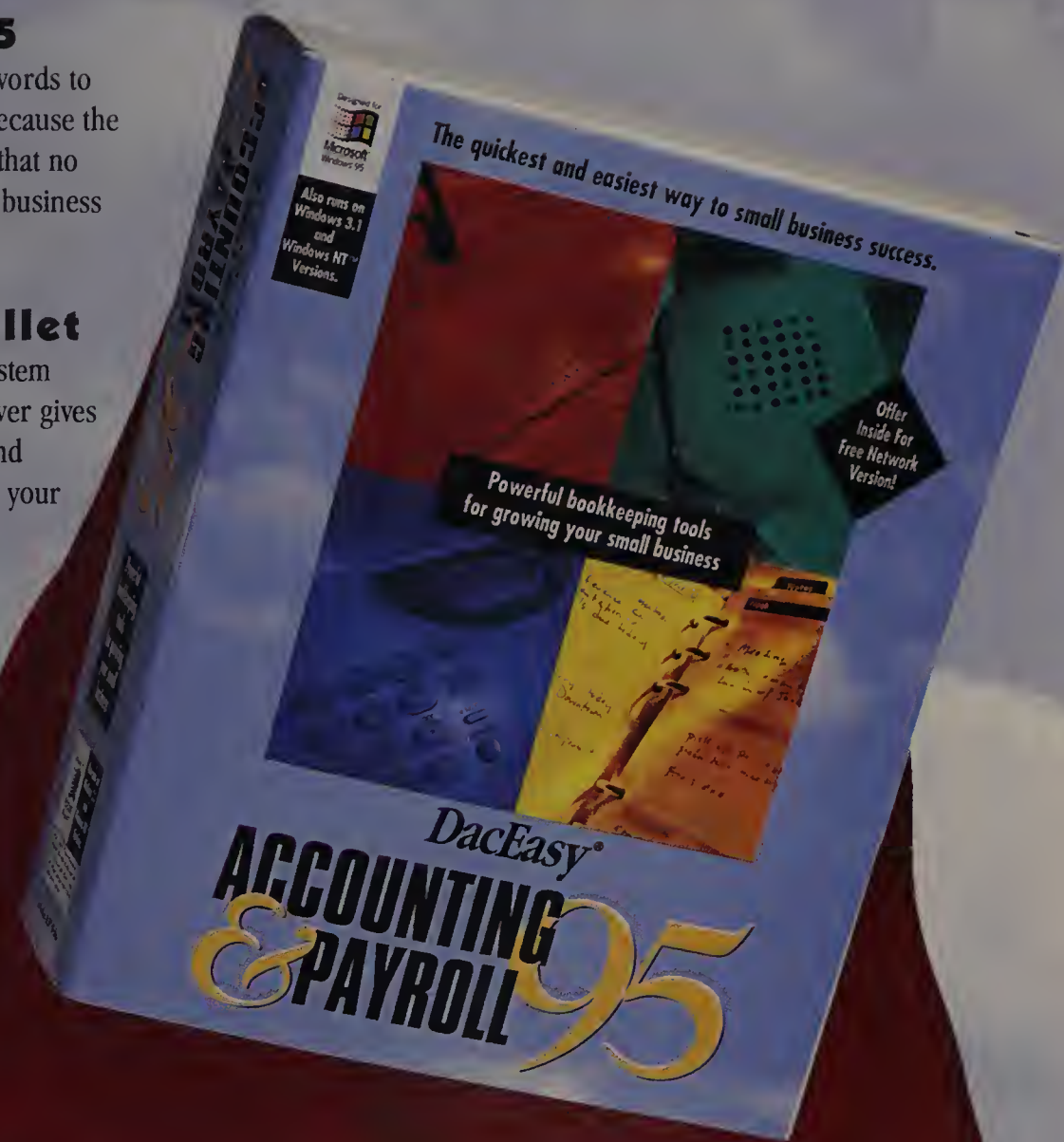
DacEasy has the first small business accounting system designed specifically for Windows 95. True 32-bit power gives you the speed to race through your daily processing and reporting. With features like email and faxing built in, your productivity will soar.

More Powerful Than a Locomotive

With custom reporting, extensive inventory capability and links to Microsoft® Office, DacEasy Accounting & Payroll 95 gives you complete control of your business with the ease you would expect from checkwriting software.

Able to Leap the Competition

No matter what version of Windows you use, no matter what products or services you sell, no matter whether you have one or fifty employees, DacEasy has the power and the speed to grow YOUR business. If you're ready to switch to a super solution that can save the day, try new DacEasy Accounting & Payroll 95.



Super Price
as low as
$75*
after rebate

Switch and Save!

Designed for Windows 95. Also runs on Windows 3.1 and Windows NT.

If you want real 32-bit accounting and you're tired of those programs that don't have enough power or flexibility, switch to DacEasy Accounting & Payroll 95 and get $25. When you switch, you can transfer Peachtree® and Quickbooks® data directly into DacEasy. Plus, you'll receive FREE FORMS for your business. Switch to a better accounting system today and save! But hurry, this limited time offer won't last long - call today.

1-800-DACEASY
1 - 8 0 0 - 3 2 2 - 3 2 7 9

Visit our homepage at www.daceasy.com

Media Code: PCW

Rebate offer expires July 31, 1996. Materials must be postdated no later than that date. To redeem offer, purchase DacEasy Accounting & Payroll 95 from your local reseller and mail the attached packaging sticker along with your receipt and a copy of the manual cover of your Quickbooks, Peachtree, One Write Plus, MYOB or Cashgraf software to DacEasy. Your $25 rebate will be sent to you within 4-6 weeks. Limit one rebate per business. Data transfer compatible with the following software available as of June 1, 1996: Quickbooks 3.0 and above, Peachtree 3.0 and above. © Copyright 1996 DacEasy, Inc. All rights reserved. All product names are trademarks or registered trademarks of their respective corporations. *Average street price is $99 plus the $25 switch rebate.

Circle 77 on reader service card

WINDOWS Q&A

Fixing File Attributes With File Manager

Q Sometimes I need to change the attributes of files on my system. I use the DOS prompt because the wild cards let me work on many files at once. But I prefer to work with File Manager. Is there an easy way to do this in File Manager?
Joe Hanson, Internet

A To set the read-only, archive, hidden, and system attributes in File Manager, select one or multiple files and choose *File•Properties* or press **<Alt>-<Enter>**. Check the boxes for attributes you want, uncheck the boxes for those you don't, and click *OK*.

If the files you want to change are in a contiguous group in your directory, you can select them and open the Properties dialog box in one quick move: Select the first file in the group, then hold down **<Alt>-<Shift>** while you double-click the last file in the group. If the files you want to change aren't in a contiguous group, hold down **<Ctrl>** while you click each file. When you get to the last file, hold down **<Ctrl>-<Alt>** while you double-click it.

For more File Manager mouse moves, see the figure below.

Taking Program Manager to the Limit

Q My Program Manager is starting to get pretty crowded with icons and group windows—I'm starting to wonder if I'm going too far. Is there a limit to the number of groups and icons I can make?
Todd Swenson, Montgomery, Alabama

A Windows 3.1 imposes a limit of 50 icons per group and 40 groups in all. If you're getting close to that maximum, you might want to curb your clutter—and a little pruning should make navigation quicker and easier.

Not Quite Uninstalled in Windows 95

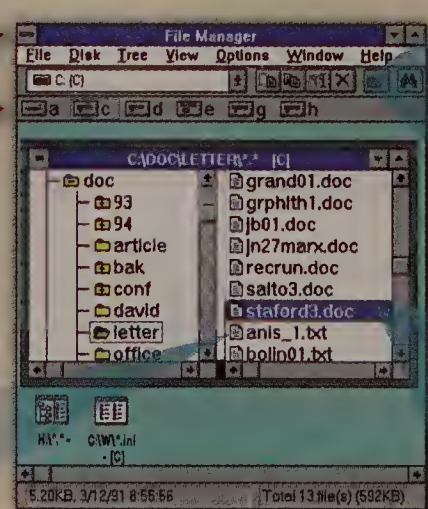
Q I am running Windows 95, and I used to have Ami Pro 3.0 on my system. Although I have since uninstalled it, whenever I right-click on my desktop to create a new file or folder, one of the options is Ami Pro. How do I get rid of this? I have gone in the win.ini and deleted any reference to Ami Pro, but it didn't help.
Byron J. Boudreaux, Internet

A This is a problem for old and new applications with uninstall features that don't completely clean up after themselves in Windows 95. To remove the .sam file type from Windows awareness, along with its presence on the New submenu, double-click *My Computer* or start Windows Explorer. Choose *View•Options* and click the *File Types* tab. Scroll through the list of Registered file types and select the file

Save Time by Mousing Around in File Manager

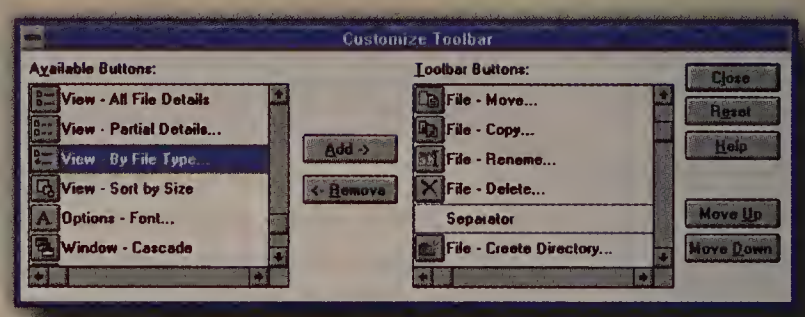
Hold down <Shift> and double-click the Control button to save File Manager's configuration of drive windows for the next start-up. Make sure Options • Save Settings on Exit is not checked.

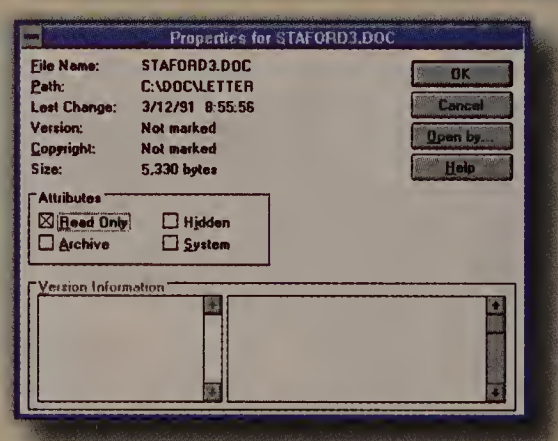
Click a drive icon once to display that drive in the current drive window; double-click the icon to open a new drive window.



Hold down <Shift> and double-click a file to launch that file in its associated application as a minimized icon on the desktop. This is a quick way to launch multiple applications or documents.

In Windows for Workgroups, double-click a blank area of the Toolbar to open the Customize Toolbar dialog box.





Hold down <Alt> and double-click a file to open its Properties dialog box.

YOU CAN GET AROUND FAST IN FILE MANAGER with these quick but less than obvious mouse maneuvers.

NEW PROCOMM PLUS 3.0

Some people are more connected than others.

They cruise the Net. They download files. They fax on-line. And now the truly connected will do all this and more from one single software program, new PROCOMM PLUS® 3.0 for Windows.® New to the world is our Connection Directory, the single source for all your data, fax, voice numbers, email, Web, Telnet, FTP and news entries. Just click on a directory entry and PROCOMM PLUS makes the connection. Whether you are just getting started or an expert, the PROCOMM PLUS "Web Zeppelin™" browser is the new way to cruise the World Wide Web. Our Internet access automatically helps you set up an account with a national service provider—or connects to your current provider. New generation fax comes with an all new Fax Manager, OCR and annotation tools. (*This is very cool.*) And data communications includes 36 terminal emulations, all the most popular file transfer protocols, new RIPscrip emulation and a QWK Mail editor to manage electronic mail messages off-line. New PROCOMM PLUS 3.0 connects your connections. It's that simple. So call us at **1.800.474.1547** or check us out at **www.datastorm.com**.

All brands and product names are trademarks or registered trademarks of their respective holders. ©1996 DATASTORM. All rights reserved.

Circle 79 on reader service card

VERY CONNECTED™

Internet · Fax · Data

type associated with the application you uninstalled. Then click *Remove*.

If your application had more than one file type associated with it (such as templates, style sheets, and so on), you'll need to repeat this process for each one. When you're finished, click *Close*. Naturally, if you created any Shortcuts for your erstwhile application (such as in Windows' Send To folder), you'll have to delete them manually.

Hanging Up on Windows 3.1

Q Often when I exit Windows, I see nothing but a blank screen; I don't get a DOS prompt or anything else. Can you help?
Ted Clawson, Boston

A After running in Enhanced mode, Windows can mysteriously hang on exit for a variety of reasons. Here are the leading causes—and work-arounds:

Your exit sound file is corrupted. Go to Control Panel, double-click *Sound*, select *Windows Exit* from the Events list, and select *<none>* from the Files list. Click *OK*. If Windows runs okay for several days, remove the corrupted .wav file and assign a different sound.

Your system is not capable of running DOS in the upper memory area. To rule out this possibility, use your favorite text editor to open your config.sys file, and at the beginning of the dos=high line, type **rem** followed by a space.

You have a file named winstart.bat in your Windows directory. Although winstart.bat can save conventional memory in some cases, it may also be causing your problem. If you have a winstart.bat file in your Windows directory, use a text editor to remove the lines from winstart.bat and paste them into autoexec.bat instead. The downside is that you'll have less conventional memory. For more information on winstart.bat, see "Making a Fresh Winstart in Windows 3.*x*" (*Windows*, April).

You have a conflict in your upper memory blocks. Exit to DOS and use the DOS 6.0 **memmaker** command (or other tools you may have) to make sure you don't have multiple utilities attempting to use the same area of upper memory.

Your system is using the net start command before loading a network driver. Edit your autoexec.bat file to make sure network drivers are loaded before running net start.

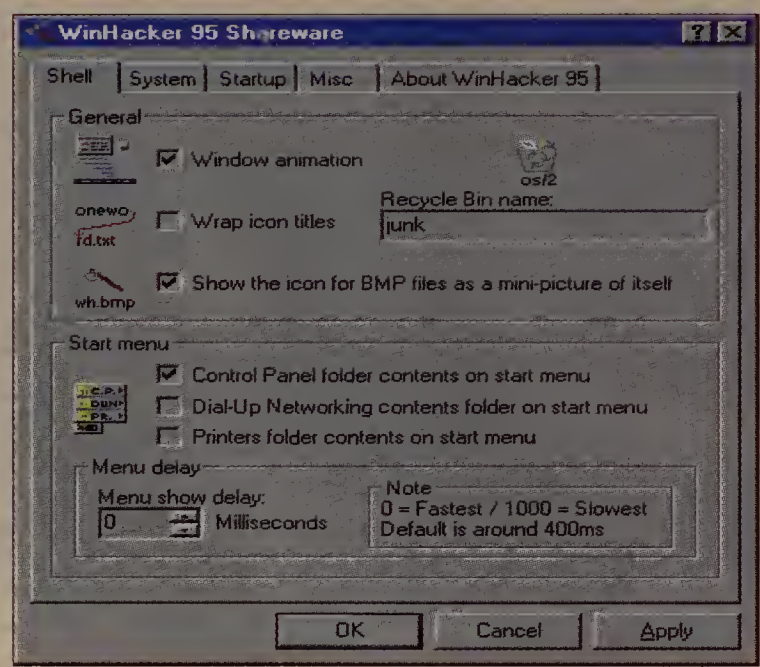
Your network card is not terminated correctly. Check with your network administrator or network documentation to ensure that your network adapter is terminated properly.

Himem.sys (Microsoft's memory manager) needs a helping handler. Your computer gives himem.sys access to high memory via an "A20 handler" that is specified in your config.sys file. For example, the following line forces himem.sys to use the IBM PC AT handler: **device=c:\dos\himem.sys /m:*1***.

Replace the *1* with the correct handler number from your system documentation or vendor.

Using the wrong handler can cause the machine to hang when you boot, so before experimenting with this setting, make sure you have a bootable floppy disk with edit.com (or another text editor) or at least a backup copy of your original config.sys file.

Windows Toolbox: Tweaking Win 95



Microsoft dropped a lot of Windows 95's customization options into that well of mystery known as the Registry. But don't worry—Wedge Software has included many of these options in WinHacker 95, a handy little program that resembles a Control Panel properties sheet, replete with additional controls for smoothing out the Windows interface.

With WinHacker, you can make each .bmp icon look like a miniature version of the actual file; rename the Recycle Bin; turn off window animation; hide the start-up graphic; make Control Panel, Dial-up Networking, and Printers folders appear as menus on the Start menu; and more. Registration costs $11, and you can try out the shareware version, with some of the features disabled; it's available as wh95-11s.zip on PC World Online. For the latest information, check out the author's home page at http://www.rust.net/~robertw/.

Barred From Action in WordPad

Q The January article on Windows 95 tips ["95 Essential Tips for Windows 95"] was very helpful on the whole. However, I ran into trouble with tip 91, which described how to collapse WordPad's standard toolbar and format bar into one. In experimenting with moving the bars around, I somehow managed to completely lose the toolbar; there is a blank space where the bar used to be, and all the buttons and icons are gone.

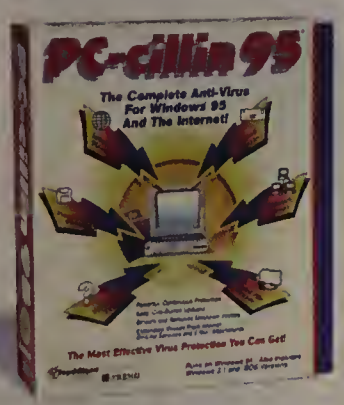
I have tried uninstalling and then reinstalling WordPad, but that doesn't solve the problem. What's going on?
John Marsh, Internet

A You apparently nudged the toolbar off the edge of WordPad's window. To get it back where you can grab it, you'll have to either enlarge your view of the desktop or mess with the Windows Registry.

For the first method, right-click the desktop and choose *Properties*. Click the *Settings* tab, and in the Desktop area, drag the slider control toward

Shouldn't Your Virus Protection Be This Easy?

(we think so)



It's true. Many of today's anti-virus programs are so complicated and confusing, you practically have to be a rocket scientist just to figure out how to make them work. But don't get mad – get automatic with PC-cillin 95®!

PC-cillin 95 is the only anti-virus program that protects your computer without having to be told what to do every step of the way. It guards your entire system, updates your protection, and removes viruses – all AUTOMATICALLY! It's like having a built-in virus expert right inside your PC.

PC-cillin 95's power is unmatched – it knows exactly how to handle Windows® 95 and the Internet. Even if you're an experienced user, PC-cillin 95 will look for viruses in places that you may not think of. The program's Smart Monitor™ makes sure that every single virus threat is being watched continuously, including Internet e-mail, on-line services, networks and floppy disks.

And it's dynamic! PC-cillin 95 automatically adjusts your protection to give you the added defense when you need it the most, especially when you're surfing the Net.

When it comes to updating your protection, just click a button and PC-cillin 95 automatically downloads the latest pattern file update for you. And if you ever find a virus, you don't have to worry about what do with it. PC-cillin 95's Clean Wizard™ will remove it for you step-by-step. No other anti-virus is so advanced, so comprehensive – and so easy to use.

So don't waste valuable time trying to figure out a complicated anti-virus program. Get automatic virus protection with PC-cillin 95!

(800) 932-5566

Now Available At Stores Everywhere – Get PC-cillin 95 Today!

"If you're looking for a way to react quickly and automatically to a variety of virus threats, look no further than PC-cillin 95."

–PC Magazine - February 20, 1996

TouchStone Software Corporation

TREND MICRO DEVICES INCORPORATED

2124 Main St. • Huntington Beach • CA 92648
(714) 969-7746 • http://www.checkit.com

Circle 234 on reader service card

Copyright © 1996 TouchStone Software Corp. ALL RIGHTS RESERVED. TouchStone is a registered trademark of TouchStone Software Corp. Huntington Beach, CA. PC-cillin 95 is a trademark of Trend Micro Devices, Inc. Windows is a registered trademark of Microsoft Corporation. All other trademarks and registered trademarks are the property of their respective owners.

CODE PCW 696

More (moving it one increment should be enough). Click *Apply* and then follow any prompts that your video system requires.

At this higher resolution, everything should look a little smaller; that's to be expected. Start WordPad and click its maximize button. You should be able to see the missing toolbar. Drag the toolbar back toward its original position. Then exit WordPad, return to the Desktop Properties sheet, and reset your Desktop area to the size that you normally use.

If your Desktop area is already at the maximum resolution or your monitor doesn't support higher resolutions, you'll have to dig into the Registry. As a precaution, make a backup copy of these important files in the Windows folder: user.dat, user.da0, system.dat, system.da0. (If you don't see them, choose *View • Options* in My Computer or Explorer, click the *View* tab, select *Show all files*, and click *OK*.)

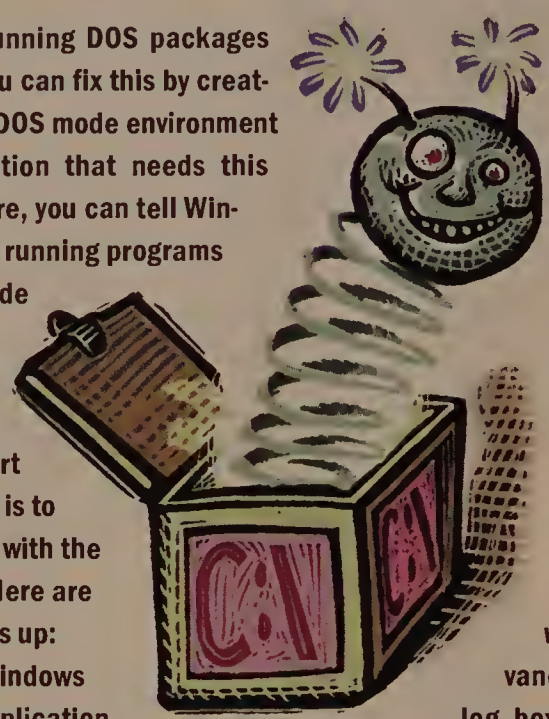
Now start the Registry Editor by choosing *Start • Run*, typing **regedit**, and pressing **<Enter>**.

Navigate through its branches in the same way you would move through an Explorer file tree, until you come to the item HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Applets\WordPad\Word6. Click the *Word6* folder in the left pane to see its contents in the right pane. Select the *Layout* icon in the right pane and press **<Delete>**. Click *Yes* to confirm that you want to delete it.

The next time you start WordPad, the format bar and toolbar will appear in their default locations.

7 Tips for DOS Fun and Games in Windows 95

Having trouble running DOS packages under Win 95? You can fix this by creating a custom MS-DOS mode environment for each application that needs this mode. Furthermore, you can tell Windows to close any running programs and start this mode when you launch your application, so you don't need to use the Restart option. The secret is to create a Shortcut with the proper settings. Here are tips for setting this up:



1. Find out if Windows knows your application. Choose *Start • Run*, type c:\windows\inf\apps.inf (your path may vary), and then click Yes when prompted to open this file in WordPad. Search for your program's .exe file. If you find it, chances are Windows can run this application without any special adjustments.

2. Get more memory. To adjust the amount of memory available to your DOS application, right-click its .exe file, choose *Properties*, and click the *Memory* tab. Adjust the settings for each type of memory your application can use. Then click *OK*.

3. Take over the screen. If your application has graphics that require it to run full screen, right-click its .exe file, choose *Properties*, and click the *Screen* tab. Under Usage, click *Full-screen* and click *OK*.

4. Use MS-DOS mode as a last resort. Although some applications require exclusive use of your machine, most packages will benefit from Windows 95's performance enhancements such as protected-mode drivers and 32-bit disk access. When you run an application in MS-DOS mode, you lose these advantages.

5. Make your application switch to MS-DOS mode automatically. If you must use MS-DOS mode, don't waste time switching to it from the Shut Down Windows options. Instead, right-click the .exe file, choose *Properties*, click the *Program* tab, and, finally, click *Advanced* to open the Advanced Program Settings dialog box. Check *MS-DOS mode*, modify other settings as needed, and then *OK* your way home.

6. Create custom autoexec.bat and config.sys settings. For each application that requires MS-DOS mode, open the Advanced Program Settings dialog box as described above, check *MS-DOS mode*, and select *Specify a new MS-DOS configuration*. Use the appropriate boxes to type or paste in suitable commands for that mode's config.sys and autoexec.bat. If you're not sure what to type, click the *Configuration* button and select options you think you'll need—access to expanded memory, a disk cache (SmartDrive), and so on. Finish by clicking *OK* a zillion times.

7. Skip the reminder. By default, an application set up to run in MS-DOS mode displays a warning each time you start the program to remind you that Windows will close all other applications and start MS-DOS mode. If you find this warning superfluous, open the Advanced Program Settings dialog box as described above. Then uncheck *Warn before entering MS-DOS mode*.

BILL RUSSELL

Trash Those Video Files

Here's a little tip I discovered while searching my hard drive for more disk space: If you install Windows 95 from the CD-ROM version, the Windows\Help folder holds about 7MB of AVI files that make up the tutorials for beginners (depicting how to use scroll bars and resize windows, for example).

These files are of no use to an experienced Windows user, so go ahead and delete away.

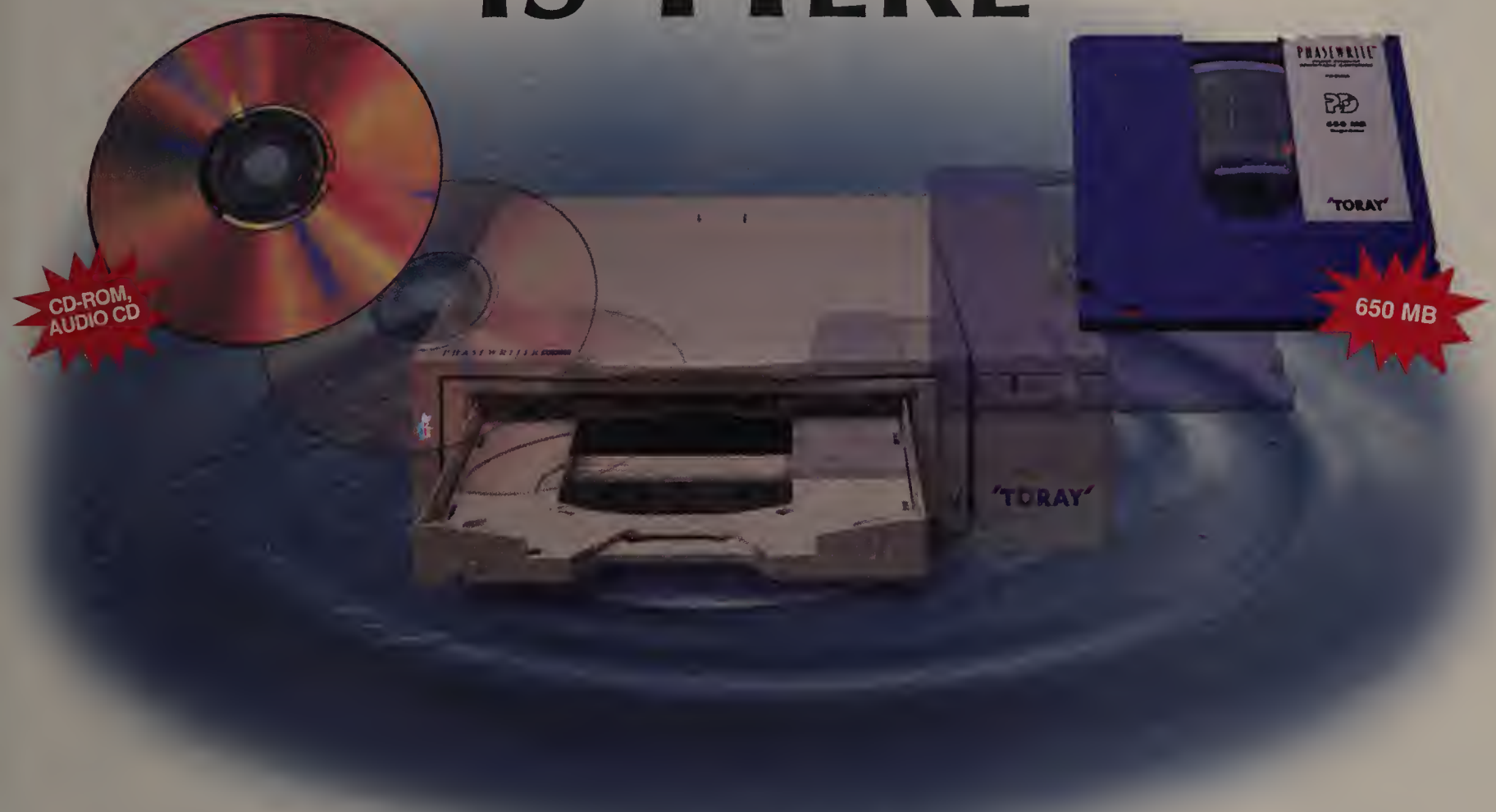
Brian Davis, America Online

By Scott Dunn

PC WORLD online *The files mentioned in this article are available on PC World Online. Scott Dunn is a contributing editor for* PC World *and a principal author of* The PC Bible, 2nd Edition *(Peachpit Press, 1995, 800/283-9444).* Windows *welcomes your questions and pays $50 for published items. See page 14 for contact information.*

THE NEW PD STANDARD IS HERE

Windows 95 Compatible



ONE SCSI DRIVE
BOTH 4X CD-ROM AND REWRITABLE OPTICAL

It's the Phasewriter Dual™ with PD technology from Toray and it transcends existing standards with more flexibility than any other optical drive. Phasewriter Dual reads CD-ROMs at quad speed and reads or writes to optical disks at a blistering .87 MBytes/second transfer rate. Just drop a CD-ROM into our new Phasewriter Dual or switch to a 650 MByte single-sided rewritable disk for portable data exchange. The Phasewriter Dual is setting new standards with higher capacity and CD-ROM compatibility at a much lower cost.

And it's Fast, Fast, Fast!
Plug this drive into any platform hardware or network and you're ready to go.

The single front loading tray holds CD-ROMs or Toray's CD-size rewritable optical (PD)disks. Because it is a SCSI drive, the software identifies and mounts either media automatically.

For information on drives, media or the retailer nearest you, call **1-800-TORAY-PD**.

PHASEWRITER DUAL™

by

'TORAY'

email: info@toray.com Internet: http://www.toray.com

©1995 Toray Marketing & Sales (America), Inc.

DATA MANAGEMENT Q&A

Sorting Through Your Options

Q I've just started working with a database and I've noticed that there are lots of ways to sort records. Can you offer any guidelines about when each of the various options should be used?
Daria Kelly, Chicago

A My rule of thumb is to do the least amount of work possible to get the job done. I'll describe how to do this in Paradox, Access, and Approach.

Paradox. The most efficient way to sort a Paradox report is to right-click the record band in Design view, choose *Sort*, and add fields to the *Sort Order* list in the resulting dialog box. **FIGURE 1** shows a report of the biolife.db table included with Paradox, sorted by Common Name instead of by the key field Species No. (By default, keyed tables are presented in key field order.)

I include sorts in a query when I plan to use the Answer table in a form or table view, rather than in a report. In the Query window, click the *Sort Answer Table* button on the toolbar, then select fields to sort by. This is good for viewing a keyed table by fields other than its key without setting up and using a secondary index (another way Paradox sorts records). However, this doesn't work when you need to edit data in a keyed table.

To browse *and* edit a keyed table in another order, you need a secondary index. Say you want to edit a table keyed by customer number, but to browse the records by name. Click *Restructure*, and in the dialog box select *Secondary Indexes* from the *Table Properties* drop-down menu. Click *Define* to set up a secondary index on the name field, click *OK*, enter a name for the index, then click *Save*. To see the records in a table view, select *Tools•Filter*, select the name of the secondary index under *Order By*, and click *OK*.

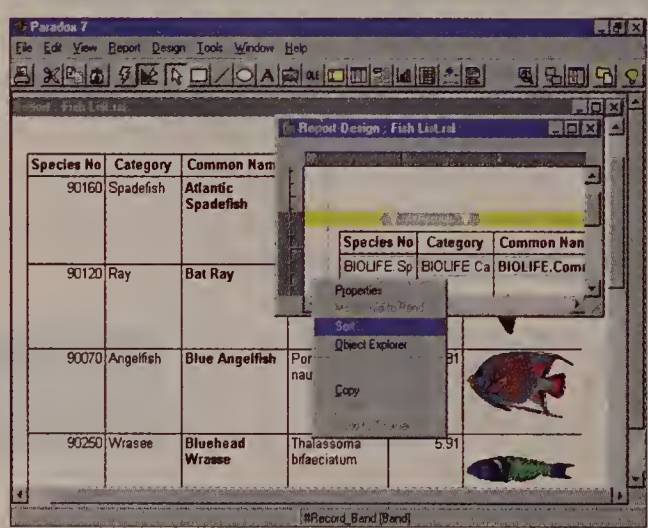


FIGURE 1: IN PARADOX, YOU CAN INCLUDE A SORT in a report's design.

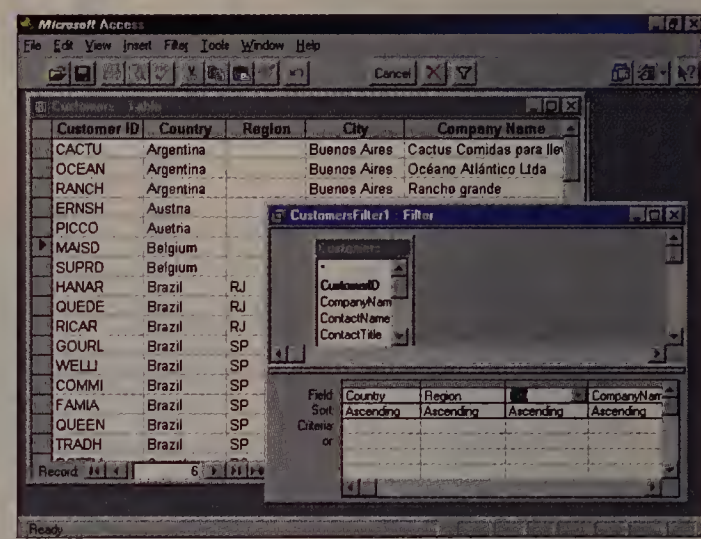


FIGURE 2: IN ACCESS, SORT SEVERAL FIELDS AT ONCE with the Filter/Sort command and its querylike grid.

You can also use the *Table•Sort* command to reorder records in a table, as long as it's not a keyed table. Unlike secondary indexes or sorts in a report, which only change the way records are displayed, the Sort command actually changes the way records are stored in their table, so you are forced to sort a keyed table to a new table.

Access. To sort records in an Access report, open one in Design view, click *Sorting and Grouping*, and then enter the field or fields to sort on.

In a table, sort on several adjacent fields at once by selecting the fields and clicking *Sort Ascending* or *Sort Descending*. Access first sorts by the leftmost column, then from left to right in order of the selected columns. To sort on nonadjacent fields, drag the fields until they're next to each other.

To sort on one field in a form or table, select the field and click *Sort Ascending* or *Sort Descending*. To sort on multiple fields, choose *Records•Filter•Advanced Filter/Sort* (in Access 2.0, *Records•Edit Filter/Sort*) to open a querylike grid (see **FIGURE 2**). To do the sort, click *Apply Filter*.

Approach. To set the default sort order for a file in Approach 96, choose *File•User Setup•Approach Preferences* and click the *Order* tab. Select a file, add fields to the 'Fields to sort on' list, and click *OK*.

Whenever you're in Browse or Design mode, you can open a Sort dialog box by pressing **<Ctrl>-T**. Select a file, add fields to the list on the right, and click *OK*. Press **<Ctrl>-A** to return the records to their original order. In Browse mode you can sort a form or report in Approach 3.0 by selecting a field and clicking *Sort Ascending* or *Sort Descending*. In Approach 96, press *Sort* to open the Sort dialog box.

Approach does not save sorts with forms or reports, but you can attach a macro that sorts records when you open a form or report. In Approach 96, select *Create•Named Find/Sort* to save a sort. Then activate it by selecting it from the drop-down menu of named finds and sorts on the Action bar.

By Celeste Robinson

Celeste Robinson is a contributing editor for PC World *and coauthor of* Mastering Paradox for Windows 95 *(Sybex, 1996, 800/227-2346).* Data Management *welcomes your questions. See page 14 for contact information.*

Comdex
Booth #C5333

Do Files You Can't Use Have You Up Against A Wall?

Power Opener!

Opens Macintosh® floppies, CD-ROMs and removable cartridges on your PC.

When you're up against a brick wall, because the file you need is on a Mac disk and you can't open it on your PC, turn to MacOpener, the fast, easy way to access any Mac-formatted disk on your PC. Don't let Mac/PC incompatibility stop you dead in your tracks again. Get the utility that gets you over the Mac disk mounting wall.

You'll find MacOpener at leading software dealers for about $49.

Power Converter!

Lets your PC convert virtually any file on any disk, PC or Mac, and use it in the software of your choice.

If you are up against an even bigger barrier, because the file you need was created in software you don't have, Conversions Plus is your answer. With Conversions Plus, you can open any file on any disk, word processing, spreadsheet, database or graphics, PC or Mac. Then you can convert, edit, print and save it, *all in your own software*, retaining the original formatting, including embedded graphics.

You'll find Conversions Plus at leading software dealers for about $99.

Both products run under Windows™ 95, Windows 3.1 and Windows NT.

800-270-0030 ext. 102

DATAVIZ
55 Corporate Drive
Trumbull CT 06611
http://www.dataviz.com

Call Now For More Information And The Name Of Your Nearest Dealer.
Ask about our multi-pack, site licenses and Macintosh products.

MicroWAREHOUSE COMPUSA EGGHEAD SOFTWARE MICRO CENTER

Circle 81 on reader service card

Swan Delivers Award-Winning Pr

NEW!

Microsoft® Windows NT™ Now Available on Swan PowerHouse!

Quality PCs and Relationships

Since 1984, Swan Technologies has built competitively priced, high-quality personal computers and long-lasting relationships with our customers. Because we listen to you first, we can build a customized PC to exceed your expectations. Our goal is nothing less than your complete satisfaction.

SWAN TECHNOLOGIES corporation

Life-Time Toll-Free Support

When you have a question, Swan will be always be there. We offer lifetime toll-free support to all our customers. We're always focused on ensuring that our customers get the information–and tools–they need to stay productive.

Satisfaction Guaranteed

We offer a no-hassles 30-day money-back guarantee. Plus, there's our one-year free on-site support including parts and labor.

Swan Express Next-Day Delivery

When you need your new computer immediately, look for the Swan Express icon. These systems are available for immediate delivery. Just call us by 1pm EST and your system will be shipped the same day.

Custom-Configuration For You

Swan will gladly custom-build a system to order. And when we say custom-build, we mean it. Many companies can make minor adjustments to a pre-configured system and call it "customized." Swan will build a PC from the ground up just for you, to meet your exact requirements and our demanding quality standards.

World Class Build-To-Order

At Swan, we never cut corners on product quality. We believe it's "quality in, quality out"–a quality you'll appreciate even if you never see the inside of your computer.

Windows® NT / '95 Choice

Swan gives you the option to choose between Microsoft® Windows® 95 or Microsoft Windows® NT. For our Family, Office and Notebook systems, you can also select MS-DOS® and Windows for Workgroups® 3.11 (pre-installed).

Quick & Smart Business Leasing

Leasing your PC from Swan has never been easier. Swan offers affordable payment plans that are designed to meet you business' monthly budget. Leasing options are available to all qualified business customers through the nation's top leasing organizations, including AT&T Capital Leasing Services and Trans Leasing International. Swan's business leasing offers the lowest possible monthly rates, lease-to-own options and terms of 12-60 months. A Swan Sales Consultant can provide details on the benefits and terms of each option.

Free Swan Product Catalog

Swan offers a full line of PC products, notebooks, servers and peripherals. Call today to receive our FREE catalog on all our products and customer services.

PowerHouse 133MHz

Designed for maximum performance, the PowerHouse features EDO DRAM and synchronous pipeline burst SRAM. With a standard 1.6GB hard drive, 6X CD-ROM and MPEG, the PowerHouse is the power-user's system of choice.

- 133MHz Intel® Pentium® Processor
- **16MB EDO Memory, Expand to 128MB**
- 256K Pipeline Burst Cache
- **1.6GB EIDE Mode 4 Hard Drive**
- **6X EIDE CD-ROM Drive**
- 64-bit PCI Graphics Accelerator with 2MB EDO Memory and Software MPEG
- Intel® 430FX Chipset
- 2Mbit Flash PnP BIOS, For Easy Upgrades
- Type 7 ZIF Socket Upgradability
- New—Intel® PIIX3 PCI Xcellerator™ BUS Mastering Disk Controller
- PCI 2.1 Compliant, Concurrent PCI DMA Support
- 6 Expansion Slots: 3 PCI, 2 ISA, 1 PCI/ISA
- 3.5″ Floppy Drive
- 15″ .28mm Flat Screen Color Monitor
- 2 High-Speed Serial Ports, 1 Parallel Port
- **Microsoft® Windows® NT or Microsoft® Windows® 95**
- 104 Key Keyboard and Mouse
- Mid-tower Case
- Internet Access Software
- One Year On-site Parts and Labor Warranty

$1949 express **LEASE $72 a month**

PowerHouse 150MHz	**$2049**
PowerHouse 166MHz	**$2199**

1992

1992

1993

1993

1993

1994

1994

uct and Service. Since 1984.

EW!

SwanNote-Plus/CD Multimedia Notebook with 6X Internal CD-ROM!

SwanNote-Plus Mini Docking Station

PowerHouse-Deluxe 166MHz

l the standard features of the Power-ouse system, plus Microsoft® Office ofessional, a 2.0GB hard drive and ven popular business CD-ROM titles.

- 166MHz Intel® Pentium® Processor
- **16MB EDO Memory, Expand to 128MB**
- 256K Pipeline Burst Cache
- **2.0GB EIDE Mode 4 Hard Drive**
- **6X EIDE CD-ROM Drive**
- 64-bit PCI Graphics Accelerator with 2MB EDO Memory and Software MPEG
- Intel® 430FX Chipset
- 2Mbit Flash PnP BIOS, For Easy Upgrades
- Type 7 ZIF Socket Upgradability
- New—Intel® PIIX3 PCI Xcellerator™ BUS Mastering Disk Controller
- PCI 2.1 Compliant, Concurrent PCI DMA Support
- 6 Expansion Slots: 3 PCI, 2 ISA, 1 PCI/ISA
- 3.5″ Floppy Drive
- 15″ .28mm Flat Screen Color Monitor
- 2 High-Speed Serial Ports, 1 Parallel Port
- **Microsoft® Windows® NT or Microsoft® Windows® 95**
- **Microsoft® Office Professional**
- **7 Popular Business CD-ROM Titles**
- 104 Key Keyboard and Mouse
- Mid-tower Case
- Internet Access Software
- One Year On-site Parts and Labor Warranty

$2449 express LEASE $90 a month

PowerHouse-Deluxe 133MHz	**$2199**
PowerHouse-Deluxe 150MHz	**$2299**

SwanNote-Plus/CD P120

Experience the ultimate in multimedia notebooks. Ergonomically designed with the latest technology–all in one sleek, compact package.

- 120MHz Intel® Pentium® Processor
- **11.3″ Active-Matrix 800x600 Color Display**
- 8MB DRAM, Expandable to 40MB
- 810MB Removable EIDE Hard Drive, Upgrade to 1GB
- **6X CD-ROM Internal Module**
- 256K Synchronous Pipeline Burst Cache
- Intel® 430MX Mobile Chipset
- 6.8 lbs. (with CD-ROM Drive)
- 32-bit PCI Local Video Bus, 1MB DRAM, Upgrade to 2MB
- 16-bit Stereo Audio, SoundBlaster Compatible
- 3.5″ Modular Floppy Disk Drive
- Dimensions 11.1″W x 8.66″D x 1.89″H
- TrackPad Ergonomic Pointing Device
- **Built-in Microphone and Stereo Speakers**
- LCD System Window Display, LED Status Indicators
- Lithium Ion Battery with Universal AC Adapter
- **Infrared IrDA Port**
- Flash BIOS
- 2 Type II /1 Type III PCMCIA Slots
- 84 Key Keyboard
- **MS-DOS® and Microsoft® WFW 3.11 or Microsoft® Windows® 95 (Installed)**
- One Year Factory Parts and Labor Warranty

$3359 LEASE $117 a month

P100 Active-Matrix	**$3299**
DSTN Pricing	**Call**

Notebook Upgrades†

Additional 8MB	$379
Additional 16MB	$769
Hard Drive - 810MB to 1.0GB	Call
NiMH Battery Pack	$75
Second NiMH Battery Kit	$110
Battery Recharger	$49
Adaptec AirPort 2000	$99
Deluxe Carrying Case	$69
PCMCIA 14.4Kbps Fax/Modem	$195
Extended Service Plans	Call
Mini Docking Station	**$179**

- 1 Serial, 1 Parallel, Keyboard,
- Mouse and VGA Port Replication
- Microphone In, Speaker Out
- MIDI, Joystick Port
- Two Stereo Speakers

Main Docking Station	**$700**

- All Features of Mini-Docking Station Plus:
- 5.25″ Drive Bay
- Internal CD-Audio Interface
- 1 Full, 1 Half Size PCI Slot

Desktop Upgrades†

Additional 16MB	$560
Hard Drive - 1.6GB to 2.0GB	$109
Monitor - 15″ to 17″ .28 Flat Screen	$299
Fax/Modem - 14.4Kbps Internal	$69
Fax/Modem - 28.8Kbps Internal	$149
Fax/Modem - 28.8Kbps Internal w/ Voice	$169
Multimedia Package	$140

- Creative Labs Vibre 16™ 16-bit Stereo SoundBlaster™ Compatible Sound Card
- Amplified, Shielded Stereo Speakers
- Microsoft® Encarta™ and 8 CD-ROM Titles

NEW!

Pentium® Pro Based Systems

New Intel Pentium® Pro based systems–call Swan for product information.

SWAN 12 YEARS

800-554-6746 96PCW6

Federal Customers Call: 800-382-4919 • **GSA# GS-35-4270D** • www.swantech.com

Specifications and prices subject to change without notice. All marks are property of their respective organizations. *Overnight delivery available on Swan Express orders. On-site service may not be available in some remote locations. Call for details of warranty and service agreements. †Upgrade prices valid at time of system purchase. (Ad by MoonBeam Graphixs, Marlborough, MA)

SWAN TECHNOLOGIES corporation

Circle 214 on reader service card

ONLINE Q&A

What Is America Online Doing With My Bank Account?

Q A few months ago, I noticed a $12 deduction from our money market account. I called the bank, and the customer service rep told me it was an automatic payment to America Online. "What!" I cried. "We don't subscribe to America Online!" The next week, there was another payment to AOL.

It turns out my husband installed America Online's software on his computer at work to get those 10 free hours online. But you can't get those free hours until you give AOL a bank account or credit card number. So he gave a phony bank account number. But AOL found our real bank account and is now taking our money!
Jessica Portlo, Dallas

A A phone conversation with the Portlos [not their real name] revealed that before Mr. Portlo gave AOL a fake bank account number, he typed in his bank's correct identification code so that AOL's bank code-checker would permit him to log on. He then typed in the fake number. The electronic funds transfer authorization successfully traveled from AOL to the Portlos' bank. Bank personnel spotted the erroneous account number but assumed a clerical error, since the Portlos were customers. The bank found the correct number and began deducting the monthly AOL fees from the Portlos' account.

When the Portlos complained, both the bank and AOL pointed out that giving a false account number and authorizing transfers from that account, as Mr. Portlo did, constitute wire transfer fraud under federal law. In the ruckus of accusations among the Portlos, the bank, and AOL, even the Secret Service got involved.

In the end, the Portlos were not prosecuted, AOL refunded them their $24, and the Portlos were considering suing their bank.

Let this serve as a cautionary tale. It *is* fraud to provide a false credit card or bank account number when you sign up for an online service, since you are agreeing to pay for that service. Before providing any bank or credit card number to an online service, read the terms of the free trial membership. (Even if you think you're not a subscriber to the service, as Mr. Portlo insists he never was, you are if you agree to membership terms by logging on, typing your address and bank or credit card number, and clicking the box that says "Yes, I agree to the membership terms.")

America Online, CompuServe, and Prodigy all offer a free month of membership, but to ensure that you're not billed for subsequent months, you must cancel the account before the first month is over. All the services have specific requirements for how to do this (see "Cancel Trial Memberships Before You're Charged").

Internet Find: The Science Guy

VISIT BILL NYE THE SCIENCE GUY, the Mr. Wizard for the MTV generation, at his World Wide Web home (http://nyelabs.kcts.org/). Read about upcoming shows, download QuickTime clips, and send Bill e-mail.

Jazz Up Your Web Pages

Q Is there any place on the Internet where I can find clip art and other graphics to put on my Web pages?
Mary Longston, Concord, Massachusetts

Cancel Trial Memberships Before You're Charged

Online service	How to cancel	When to cancel	Notes
America Online	keyword cancel	before the first 30 days are up	AOL used to require cancellation by phone but now prefers that you cancel online.
CompuServe	go cancel, or call 800/848-8990	Your 10 hours must be used within the calendar month. Log on early in the month. Cancel before the 10 hours are used up if you don't want to be billed for additional online time. You will still be billed for a one-month subscription.	Watch for a letter in the mail verifying that the account has been canceled. Also, if you log on to the service within a week after you cancel your account, the account will be automatically reopened.
Prodigy	jump cancel, or call 800/776-3449	before the first 30 days are up	You may designate in advance what day you would like the account closed.

PIPELINE MAKES USING THE INTERNET PRETTY DARNED EASY.

THE CANDY: Easy to take, easy to use, not to mention immediate access to the Internet; enough information to get your doctorate; e-mail that virtually eliminates the need for the post office; as well as News Groups, Internet Relay Chat, FTP, Gopher and the opportunity to create your own homepage on the World Wide Web. Our award-winning, easy interface is fully compatible with leading Web browsers, including Netscape. **THE DEAL:** For only $19.95 a month you get unlimited local access to all the Internet has to offer and no sneaky additional hourly charges to make you cranky.

PC MAGAZINE EDITORS' CHOICE October 10,1995 Pipeline USA

THE NUMBER: If you're still not interested, go ahead and ring us anyway. The call's free, the software's free and so are your first 14 days. You've got nothing to lose.

1-800-379-8853

WINDOWS MAG 1995 WIN 100

PIPELINE℠

NOW WINDOWS® 95 COMPATIBLE

Service fees apply beyond the first 14 free days. Valid major credit card required. Phone charges may apply. A PSINet Company. © PSINet Inc. 1996.

Circle 177 on reader service card

A Clip art is great for sprucing up a Web page, and you'll find tons of it on the Net. The best place to start looking is The Clip Art Server (http://www.n-vision.com/panda/c/), where you'll find links to all the major collections. (Warning: You have no way of knowing if the pictures you find on the Internet are copyrighted. I spotted a few Web sites that offered bootlegged art from CD-ROMs and Disney cartoons.)

If you're looking for unique bars and buttons, check out the Buttons, Cubes, & Bars page (http://www.cbil.vcu.edu:8080/gifs/bullet.html). AIM Inc. offers some neat bar and button sets on its page (http://firstnations.ca/~aim/graphics/disclaim.htm). For icons, try The Icon Browser (http://www.cli.di.unipi.it/iconbrowser/icons.html).

For a great collection of backgrounds that you can tile, try Saber-Space Graphics Depot (http://www.netrunner.net/~sabercat/depot.html). Texture Land (http://www.meat.com/textures/textures.html) has an impressive list, as does The BackGrounder (http://128.172.69.106:8080/cgi-bin/background.html).

Here's how to capture one of these images to disk: Place your cursor over the image, click the right mouse button, and select *Save this Image as...* from the pop-up menu, as shown in **FIGURE 1**. Save the image as a .gif file if you plan to include it on a Web page.

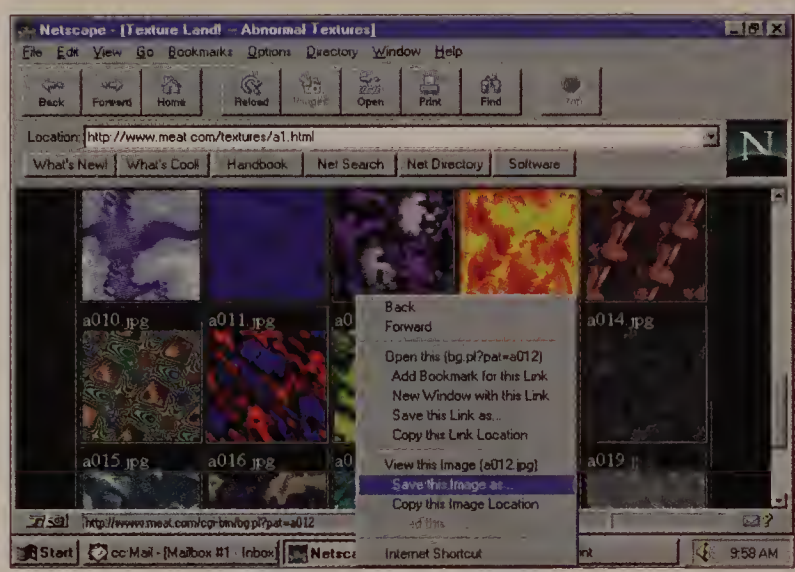


FIGURE 1: TO SAVE AN IMAGE TO DISK, place your cursor over it, click the right mouse button, and select *Save this Image as...* from the menu. Save it as a .gif file for use on a Web page.

Cache Out Your Web Browser

Q After I've been on the Net, I find several cache files on my hard disk. The files are small, but I imagine that after a few months they'll be eating up a lot of space. What are they, and can I delete them?
Barry Rosenstock, Tokyo, Japan

A Whenever you access a Web page, your browser stores it in a cache file so that when you revisit the page, the browser doesn't have to download it again. In Netscape Navigator these files are in a directory called Cache.

You can delete those files, making access to your favorite Web sites slower, but you needn't bother. Most browsers clean up after themselves, filling only a designated amount of space before erasing files. If ▶

COMING UP

World Class: Best Products of the Year

The envelope, please...We asked 2000 experts to pick the best products of the year. From systems to CD-ROMs, word processors to Web sites, *PC World* presents the 14th annual World Class Awards.

Annual Workgroup Printer Roundup: Laser Wars

The latest business printers from HP, Lexmark, TI, Apple, and more, vying for Best Buy honors in our expanded coverage of the Top 10 workgroup printers. Also introducing our Top 3 network printers.

Internet Service Providers: Riding the Wild, Wild Web

ISDN or modem? SLIP/PPP or shell account? Choosing an ISP can be overwhelming. *PC World* corrals the best options for wanna-be Web surfers searching for the perfect connection.

Also Next Month

▶ **The PC World Top 20 Power Desktops, Budget Desktops, and Notebooks, Plus the PC World Top 10 Graphics Boards, 17-Inch Monitors, and Modems**

▶ **Windows 95 Databases: The best picks from Access, Paradox, Approach, and others**

▶ **Special Report on Small Office, Home Office: The essentials for running a small or home office—from automation to home security**

PC WORLD

Now

You Can Bat

Those Baby Blues

All Over

The Internet.

Introducing Connectix Color QuickCam™, the camera and software that lets you use your computer in fun ways at home, business and on the net. Send personalized cards. Add images to business reports. Videoconference with additional software. Spiff up your web site. Get Color QuickCam for under $200*. Just plug it in, install the software and start taking brilliant color pictures and video on your computer.

Connectix

1-800-571-7558 or www.connectix.com

*Estimated retail price after $30 rebate

Circle 86 on reader service card

Now You Can With Color QuickCam

For Windows and Mac platforms. Available wherever computer products are sold.

San Mateo, CA 94403 USA • 415-571-5100 • FAX. 415-571-5115 • EMAIL. info@connectix.com. QuickCam is a trademark of Connectix Corporation. All other trademarks are the property of their respective owners.

you like, you can limit the space your browser clutters by tweaking its cache settings. Or you can give it more space to fill with images. In Navigator 2.*x* select *Options•Network Preference*, and go to the Disk Cache category.

The optimal disk cache size for any browser seems to be 5MB. But one of our readers, Justin Roberts, writes that if you use America Online, you can speed up your Web connections by increasing the built-in browser's default cache size from 1MB to 10MB or even 25MB. Select *Members•Set Preferences*, click the *WWW* icon, and choose *Advanced*. AOL's browser is lax on housekeeping, so you will have to occasionally purge the cache.

If you often visit Web pages that are updated frequently, such as news pages, use your browser's Reload feature to download a fresh copy of the page.

A popular $20 shareware program called UnMOZify lets you reconstruct Web pages from Navigator cache files so that you can view entire pages offline. You can find this program on PC World Online as unmoz511.exe.

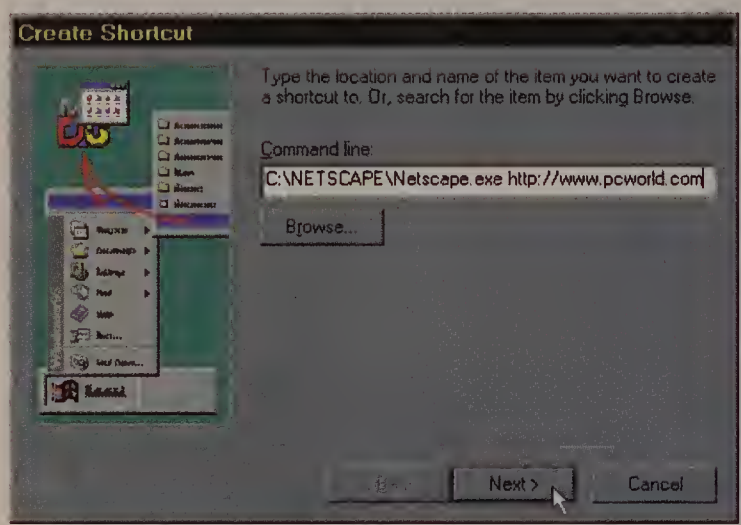


FIGURE 2: HOP TO YOUR FAVORITE WEB PAGE right from the Win 95 desktop by first creating a Shortcut to it.

Create Shortcuts to Favorite Web Sites

TIP

You can create a Windows 95 Shortcut that will take you to a Web site when you click it. First, right-click on the desktop, and select *New•Shortcut*. In the Create Shortcut dialog box, click *Browse*, and find your browser's executable file. If you use Navigator, double-click the Netscape folder, then click its icon.

In the Browse dialog box, click *Open* to copy your browser's path to the Create Shortcut dialog box (see **FIGURE 2**). Click to delete the highlighting from the command line, press the space bar to add a blank after the command, then type the Web site address. For example, the command to load Navigator and go to PC World's Web page would be **c:\netscape\netscape.exe http://www.pcworld.com**. Click *Next*, enter a name for your Shortcut, then click *Finish*.

Steve Basford, Dublin, Ohio

PC WORLD online *The file mentioned in this article is available on PC World Online. Judy Heim is a contributing editor for* PC World *and author of* Internet for Cats *(No Starch Press, 1995, 800/420-7240).* Online *welcomes your questions and tips and pays $50 for published items. See page 14 for contact information.* ■

If you think file transfer is all we do, you need some time away from the office.

Designed for Microsoft Windows 95

To appreciate how much more LapLink® for Windows® 95 has to offer, all you have to do is hit the road.

Wherever you go–across the hall, across town or across the country–if you've got LapLink, you have everything you need to access anything you want on your desktop *or* your network.

With this single piece of software, you can read and send e-mail, run databases and custom applications, synchronize data and, yes, even transfer files.

Since there's no need to change applications to do all these things, there's no need to hang up and redial.

And since LapLink works the same easy, intuitive way over modems, IPX and TCP/IP networks, serial cables, parallel cables, wireless, even the Internet, there's no need to laboriously reconfigure.

And there's no need to worry about compatibility. Our 16-bit version is built right into LapLink for Windows 95, so connecting to Windows 3.1 systems is no problem at all.

By now, you probably can't wait to get your hands on the latest LapLink. So you'll be glad to know that upgrading–from an earlier version of LapLink, or from another product altogether–is ridiculously inexpensive. Call 800-487-4396. Better yet, see your reseller.

It'll give you an excuse to get away from the office.

TRAVELING SOFTWARE

©1996 Traveling Software, Inc. LapLink is a registered trademark of Traveling Software. http://www.travsoft.com

Circle 239 on reader service card

NewCom brings you together.

You're in New York. Your design team is in Tokyo. With remarkable Digital Simultaneous Voice Data modems (DSVD) an ordinary analog phone line is all you need to collaborate. No expensive ISDN or T-1 lines needed, no quirky, hybrid modems; it's easily configured. Talk and send/receive data at the same time. Duplex technology makes voices from halfway around the world sound like they're next door. And NewCom quality modem design speeds your data at rates up to 28,800 Kbps.

The NewTalk 2000 family of DSVD modems for embedded applications responds instantly to the demands of virtually all applications, from spreadsheets to word processing, from page design to multi-media. And at the end of the day, use NewTalk's remote gaming applications for remarkably lifelike game play with competitors on all parts of the globe.

NewCom also manufactures superior full duplex Speakerphone, Voicemail and Data/Fax modems for PC's in a configuration that's just right for your business or home.

Call 1-800-5NewCom.

NEWCOM™

Your.lift.2.the.info.superhwy.

NewCom, Inc., a subsidiary of Aura Systems, Inc. • 31166 Via Colinas, Westlake Village, CA 91362 Tel (818) 597-3200 • Fax (818) 597-3210
http://www.newcominc.com

Circle 24 on reader service card

NO SPECIAL GLASSES REQUIRED

Direct, personal access to today's most valuable corporate and financial news and information...online. Right from your desktop with point and click ease.

KR BusinessBase℠, from Knight-Ridder Information. Knowledge is Power. How You Use It is Up to You.

Now you can zero in on your customers, partners and competitors with KR BusinessBase℠. Information on 10 million companies worldwide...online, on time and on target...right from your desktop.

This simple, powerful Windows™ based application gives you online access to the corporate and financial sources professionals value most, from Dun & Bradstreet to Reuters to Business Week. Over 5,000 trade and professional journals, 100 in-depth newsletters and more. All are available 24 hours a day, 365 days a year on your desktop or laptop, on the road and in the air.

No hard–to–learn instructions. Just point and click to get the accurate answers you need to build and protect your business. Credit checks...10ks...market-share...corporate shake-ups...the latest news and analysis before it's on the street. It's all online and at your fingertips with KR BusinessBase℠.

Call today and we'll send you a FREE Quick Tour Diskette and information on how to get a 10-DAY FREE TRIAL of KR BusinessBase℠.
1-800-334-2564
1-415-254-8800

KR BusinessBase
KNIGHT-RIDDER INFORMATION

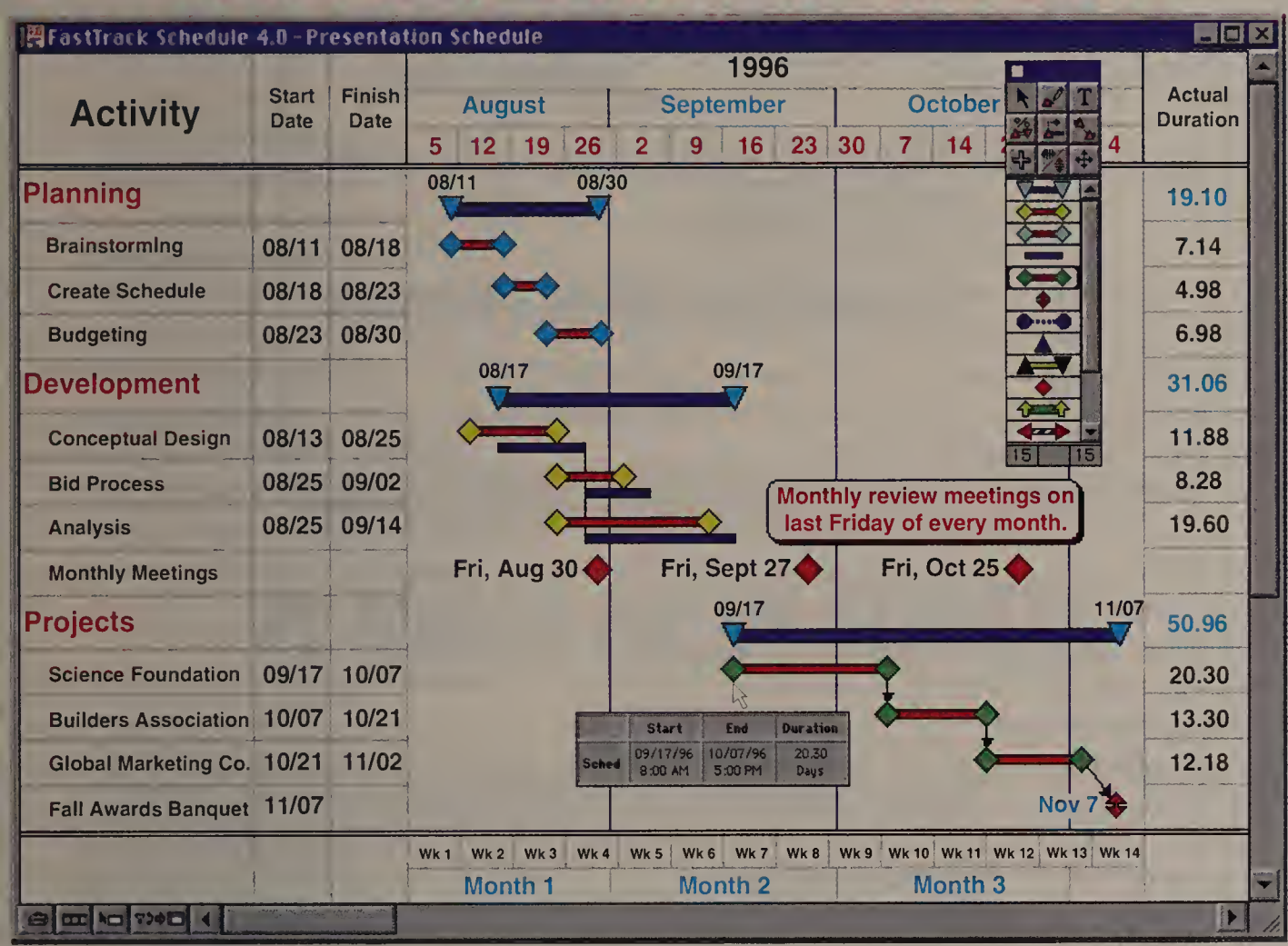
System Requirements: IBM 386 or later compatible PC with at least 4MB of RAM, Microsoft Windows 3.1 or later, a high density 3.5" floppy drive, and a modem of at least 9600 baud. Supports TCP/IP.

©1996 Knight-Ridder Information, Inc. All Rights Reserved. KR BusinessBase is a service mark of Knight-Ridder Information, Inc. Registered U.S. Patent and Trademark Office. Windows is a trademark of Microsoft Corporation.

SEE KR BUSINESSBASE AT PC EXPO BOOTH 2154

Circle 133 on reader service card

You can't stay on schedule if you don't have one.



FastTrack Schedule™ 4.0

Simple Scheduling. Impressive Power.

FastTrack Schedule 4.0 lets you create and update presentation-quality schedules quickly and easily. Whether you need a quick scheduler or a full tracking system, FastTrack Schedule 4.0 offers the combination of Flexibility, Ease of Use and Power all in one program! Take a quick look at some of the features found in FastTrack Schedule 4.0. Simple Scheduling and impressive power are as easy as...1,2,3.

1 Flexibility

- Timescales from Hours to Fiscal Years
- Link Options • Find & Replace
- Paste in Graphics & Add Textblocks
- Custom Bar and Milestone Styles
- Page Breaks • Shift Items in Work Units
- Capture Schedule Defaults • Hide Graph
- Layout Options for Multi-columnar Reports
- Durations in Work Hours & Work Days

2 Ease of Use

- On Line Help Systems • Tool Tips
- Bubble Help • Action Columns
- Control Palette • Auto Scrolling
- Bar Tracking Window • Select All
- Interactive Page Preview Layer
- Cursor Tracking Window • Quick Corner
- Templates • Floating Toolbox
- Autofit Schedule • Auto Resize Row Height

3 Power

- Scheduled, Revised & Actual Dates
- Custom Work Calendar
- Filters & Sorts • Task Dependencies
- Outline task to show sublevels
- Import & Export Data as ASCII text
- Network versions - File Locking, Passwording
- Now available for Windows 3.1, NT and 95, Macintosh and Power Macintosh

To order, for more information or for a free demo call today!

800.450.1984

http://www.aecsoft.com

Circle 14 on reader service card

AEC SOFTWARE

AEC Software, Inc., 22611-113 Markey Ct., Sterling, VA 20166 USA • Phone 703.450.1980 • FAX 703.450.9786 • http://www.aecsoft.com

©1996 AEC Software, Inc All rights reserved.
Windows, Windows 95, and Windows NT are registered trademarks of Microsoft Corporation. Macintosh is a registered trademark, and Power Macintosh is a trademark of Apple Computer, Inc.

New Version 4.0 Full 32 Bit!

Designed for Microsoft Windows 95

yes It runs with NetWare

WINDOWS MAGAZINE RECOMMENDED

"FastTrack Schedule... matches or exceeds the competing products in all aspects of project scheduling."

Windows Magazine

HARDWARE Q&A

Recycle 486 Memory in a Pentium PC

Q Most 486s use 30-pin SIMMs, while all Pentiums seem to use 72-pin SIMMs. I'd like to take memory from my old 486 and transplant it to a new Pentium. I've heard about adapters that let you plug old 30-pin SIMMs into 72-pin sockets. Do they actually work?
Sylvia Mauritius,
Coral Gables, Florida

A Yes, these so-called SIMM converters work, although they're a little touchy to install. Generally costing between $30 and $60, they're little circuit boards that accept 30-pin SIMMs (four or eight at a time) and plug into a 72-pin socket.

Using your old 486 SIMMs in your new Pentium depends on three factors: The old SIMMs' speed rating must be high enough, the SIMMs must support parity checking if required (it seldom is), and your Pentium PC must have the physical room for a SIMM converter. You need not be concerned, however, about whether your Pentium uses EDO (extended data out) RAM.

The first two factors, speed and parity checking, apply to any memory upgrade. All SIMMs have nanosecond speed ratings. Two speeds have proliferated, 70ns and 60ns, although you can still find 80ns SIMMs floating around. The lower the number, the faster the SIMM, although "speed" is actually a misnomer: When a SIMM has been rated at, say, 60ns, that means it can *tolerate* being accessed that quickly, not that it runs at this speed. In other words, you won't get a speed boost by plugging 60ns SIMMs into a system that asks for 70ns SIMMs. Just remember that if your new Pentium demands 60ns SIMMs, and your old 30-pin SIMMs are rated 70ns or 80ns, don't use those old SIMMs in the new machine or you risk memory errors that will crash your system.

Parity checking is a hardware-based scheme for detecting memory errors. For parity checking to work, both the system and the SIMMs must support it. When a system checks for parity, it won't even boot without parity SIMMs. Fortunately, many systems let you disable parity checking by moving a jumper on the motherboard or changing a setting in the CMOS setup utility, so you can install less expensive nonparity SIMMs. However, it is more likely that your old SIMMs have parity than it is that your Pentium supports parity checking—and you *can* use parity SIMMs in a system that doesn't check for parity.

Now for the hard part—cramming those SIMMs in there.

As shown in **FIGURE 1**, SIMM converters require quite a bit of headroom over the SIMM sockets, room your system may not provide. The converters also need some clearance on whichever side the SIMMs plug into. Converters with "flip connectors" are best because they're reversible, giving you a better chance of avoiding bumping into power supplies and other obstacles.

Finally, be sure the SIMM converter has *buffering*, a few small soldered-in memory chips that ensure your stack of SIMMs functions properly in your new Pentium. Of two companies I know that sell SIMM converters with buffering, SimmSaver has the largest selection of converters, while Autotime has lower prices. Both companies also sell converters for 72-pin SIMMs, so if all four Pentium SIMM sockets are filled, you can stack a couple of 72-pin SIMMs and free up a socket.

- **SimmSaver** 800/636-7281
  Reader service no. 805
- **Autotime** 503/452-8577
  Reader service no. 806

Recycle Memory With a SIMM Converter

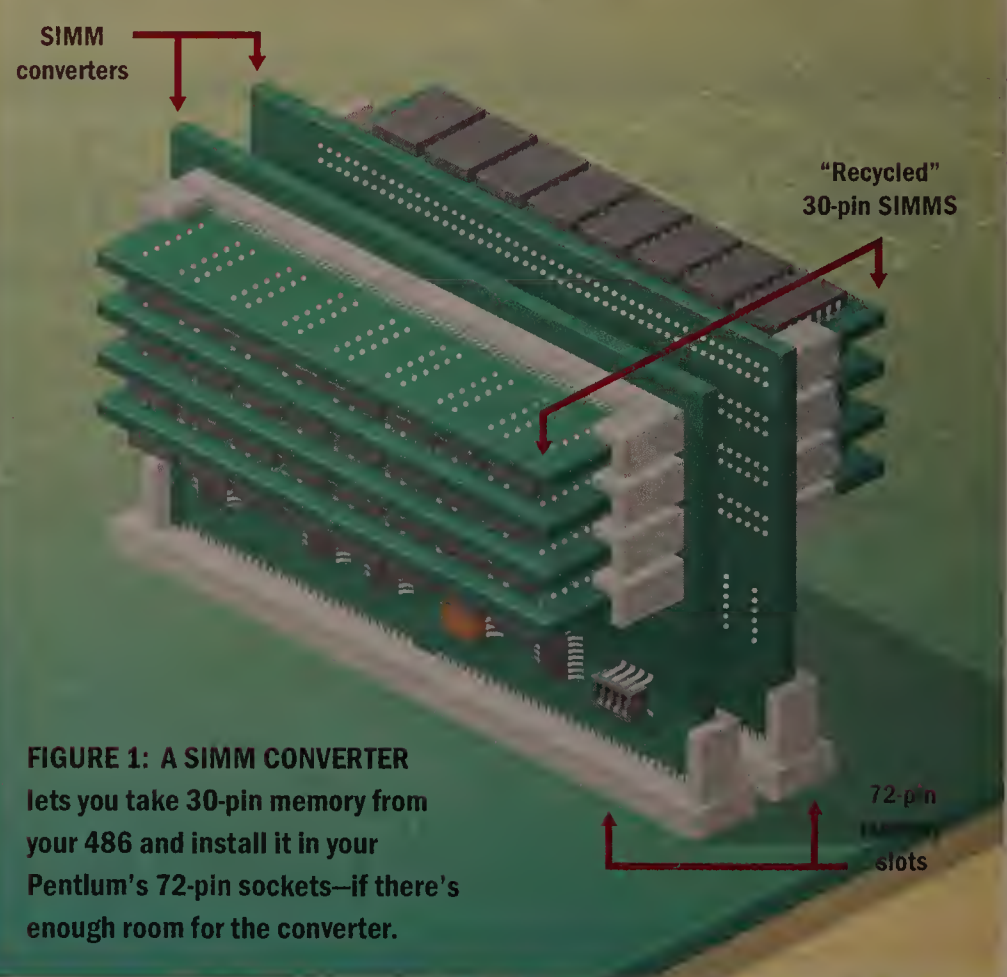
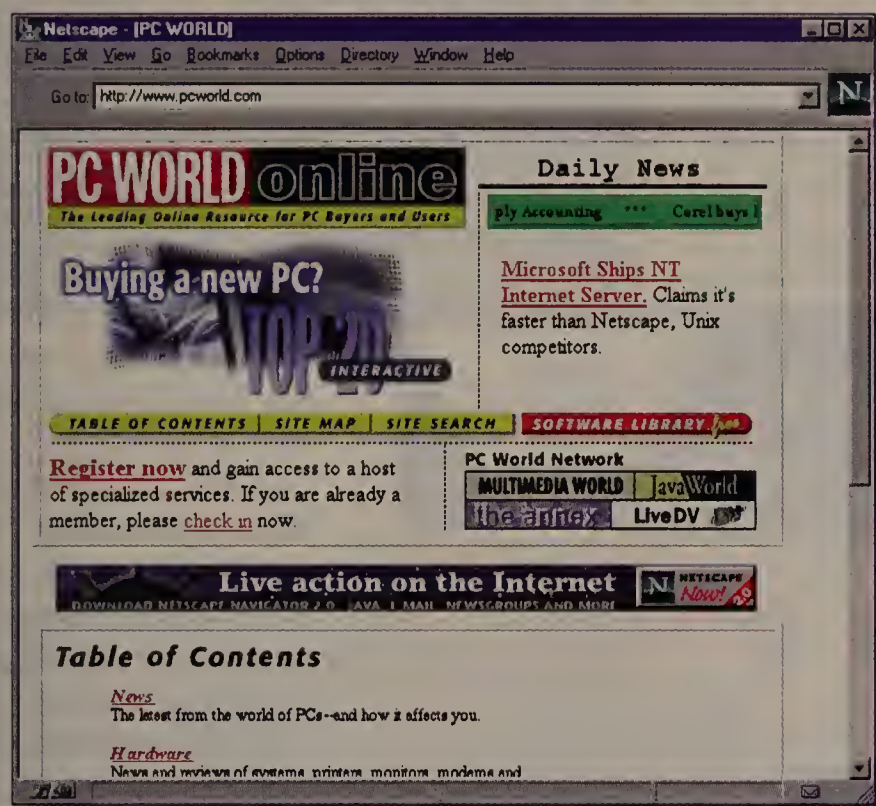


FIGURE 1: A SIMM CONVERTER lets you take 30-pin memory from your 486 and install it in your Pentium's 72-pin sockets—if there's enough room for the converter.

K. DANIEL CLARK

Visit our booths at Spring Comdex & PC Expo

GET MORE.



MORE PLACES

MORE READERS

MORE SOFTWARE

MORE TIPS

MORE REVIEWS

MORE INTERACTIVITY

MORE ANSWERS

PC WORLD ONLINE DELIVERS.

Now that you're racking up hours on the Net, where can you go to get the most up-to-date information on today's best PC products? The same source you've always trusted – PC World magazine – online!

PC World Online is the leading online resource for PC buyers and users. We provide you with more of the information you need to make fast and effective decisions. PC World Online offers late-breaking news, analysis and commentary; productivity-oriented messaging and conferencing; product reviews, Interactive Top 20; RealAudio files; downloadable demos and reports from the PC World Test Center; natural-language article searches; databases of tips, FAQ's and technical support resources; and real-time expert assistance and advice.

PC World Online Spotlights for June:

- Listen to RealAudio briefs of today's PC news
- Your complete guide to Windows 95 & 3.1 utilities
- The Interactive Top 20™: Build your dream machine
- Free demo file of Sierra's EarthSiege 2 - EARTH2.ZIP in the software library
- PC World Online hosts Panasonic: June 5, 9PM ET in the CompuServe Convention Center
- Get a FREE Windows 95 "Tip-a-Day" subscription. Sign up NOW!

Got a hot tip, a biting critique, a technical question? Post it on one of our message boards, and get a quick response from one of our savvy editors or other readers. PC World Online does more than just bring articles to readers; we bring the experience of editors, industry experts, and hardware and software specialists.

You can't miss PC World Online because we're everywhere. Explore our sites on America Online, CompuServe, Prodigy, The Microsoft Network and the Web.

PC World Online delivers it all: hundreds of thousands of online readers, thousands of downloadable software files, thousands of pages to view, daily updates, and hundreds of online-exclusive features. If you need the latest on the best, then get everything you want and more. PC World Online! Just point and click!

PC WORLD online

- America Online: keyword pcworld
- CompuServe: go pcworld
- Prodigy: jump pcworld
- The Microsoft Network: go pcworld
- Web: http://www.pcworld.com

Circle 172 on reader service card

Protecting Your PC With a Surge Suppressor, Line Conditioner, or Backup Power Supply

Q I've heard a lot of hype about surge protectors and backup power supplies for computers. Which do you recommend? And how much money must a person spend to have adequate electrical protection for a PC?

Mike Twaddle, Columbia, Missouri

A Actually, there are three basic types of power protection devices: *surge suppressors*, *line conditioners*, and *uninterruptible power supplies*. The type of device you should buy depends on the AC line conditions in your area, the quality of the power supply already in your system, and how critical your work is.

Everyone should buy a surge suppressor. These protect against power spikes and surges that can damage your computer over time—or even fry it summarily under extreme circumstances.

Look for a surge suppressor with a UL 1449 rating of 330 volts and a fast-acting fuse for lightning strikes or other catastrophic events. Depending on how many AC outlets you need, and whether you want to protect against a surge zipping through your phone line as well (not a bad idea if you live in an area with lots of electrical storms), you can expect to spend between $20 and $100.

Caution: The metal-oxide material that protects against spikes wears out over a period of months or years, depending on local line conditions. Cheaper suppressors are notorious for not telling you when this material is spent. To be safe, buy a unit with a guarantee of reimbursement for equipment damaged by a surge while plugged into the suppressor.

Line conditioners provide surge suppression plus protection against the opposite condition, dipping line voltages, which can be rough on your power supply and motherboard components, and may cause mysterious data errors. Do your lights dim or flicker periodically? Then you probably need a line conditioner, which uses a transformer to keep the power steady under most circumstances. Here, the tariff goes up to the $100 to $200 range, depending on both the number of outlets you need and the power consumption of the components you want to plug into it.

Power consumption is rated in volt-amps. On the back of your PC, or in the manual, you'll find the number of amps consumed. Multiply that number by 120 to get the VA rating; a rating of 300 to 450 VA is typical. You don't really need to plug your monitor or printer into a line conditioner, so to save cash you might get a conditioner for the PC only and a surge suppressor for the other components.

An uninterruptible power supply has a battery that kicks in when the power fails, so that your PC will keep running for a few minutes while you save files and shut down properly. It also provides surge suppression and, in most cases, line conditioning. In my opinion, unless you're setting

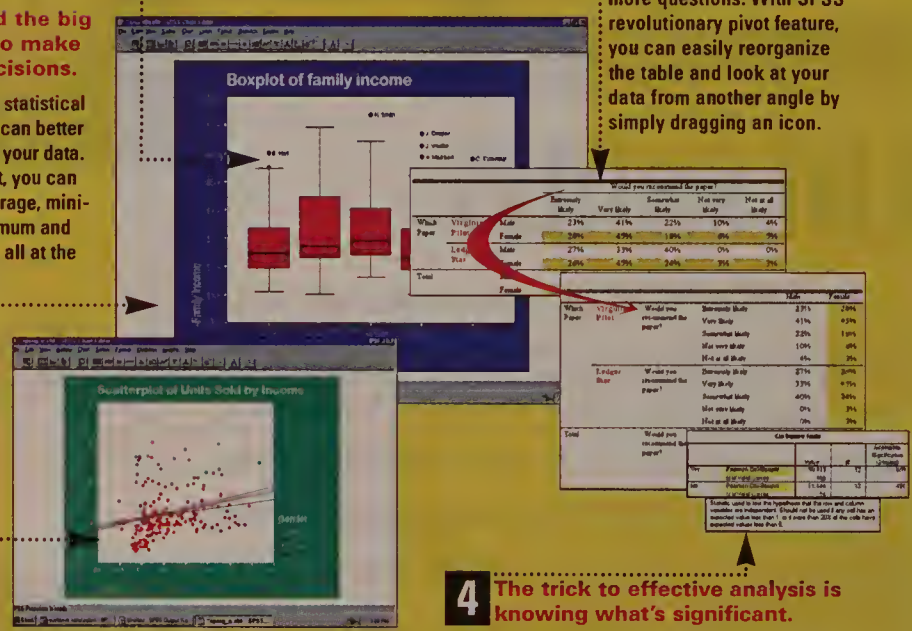
Secrets you need to know about your data

All new Windows 95 and NT versions!

1 You need the big picture to make good decisions.
With SPSS' statistical charts, you can better understand your data. In a boxplot, you can see the average, minimum, maximum and distribution all at the same time.

2 Knowing when there's a problem with your data matters.
SPSS helps you spot data entry errors or unusual data points that you may want to leave out of your analysis – or look at more closely.

3 There's more than one way to look at your data.
When you create a report, what you see often leads to more questions. With SPSS' revolutionary pivot feature, you can easily reorganize the table and look at your data from another angle by simply dragging an icon.



4 The trick to effective analysis is knowing what's significant.
Use full-featured SPSS statistics to know immediately if your results are significant or if differences are random. If your stats are rusty, click "What's This?" to get explanations, definitions and rules of thumb for statistics or results.

5 It's important to separate the apples from the oranges.
SPSS lets you quickly and easily run reports and graphs for different groups so you can look at them separately or compare them.

SPSS gives you Real Stats. Real Easy. SPSS is a complete tool kit of easy-to-use statistics, graphs and reports that will help you unlock the secrets hidden in your data. Enter your data or directly import it from spreadsheets, databases or ASCII files. SPSS is used for:

- Survey research
- Marketing and sales analysis
- Quality improvement
- Research of all types

We're not saying you should give up your spreadsheet or database. But, when you're ready to go beyond simple summaries and basic row-and-column math to get the information you really need, you're ready for SPSS 7.0 for Windows.

Designed for Microsoft® Windows® 95

Call 1 (800) 543-5837
or fax 1 (800) 841-0064. Outside the U.S.A. call 1 (312) 329-2400

60 day Guarantee valid in U.S. and Canada only

Visit our site on the World Wide Web: http://www.spss.com
or email: sales@spss.com

A5837

SPSS
Real Stats. Real Easy.℠

SPSS is headquartered in Chicago, with 20 offices and over 60 distributors worldwide.

Circle 253 on reader service card

CALL 1-800-321-4634 EXT.1802, OR SEND CARD FOR FREE CATALOG!

Name (Please Print) Age

Street (No P.O. Box numbers please)

City State Zip

A Division of The McGraw-Hill Companies

Accredited Member, Distance Education and Training Council

For career courses approved under G.I. Bill, ❑ check for details

5497-0696

Only NRI gives you the training and the state-of-the-art equipment for career advancement, part-time earnings, or a business of your own.

✓ CHECK ONE FREE CAREER CATALOG ONLY

- ❑ Computer Programming
- ❑ Microcomputer Servicing
- ❑ Visual Programming in C++
- ❑ PC Applications Specialist
- ❑ Desktop Publishing with PageMaker
- ❑ LAN Servicing
- ❑ TV/ Video/Audio Servicing
- ❑ Electronic Music Technology
- ❑ Industrial Electronics & Robotics
- ❑ Networking with Windows NT
- ❑ Basic Electronics
- ❑ Building Construction
- ❑ Home Inspection
- ❑ Air Conditioning, Heating & Refrigeration
- ❑ Automotive Servicing
- ❑ Paralegal
- ❑ Fiction/Nonfiction Writing
- ❑ Bookkeeping and Accounting
- ❑ Multimedia Programming

OR GET YOUR DEGREE!

- ❑ New! Associate Degree in Accounting
- ❑ New! Associate Degree in Business Management

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 10008 WASHINGTON, D.C.

POSTAGE WILL BE PAID BY ADDRESSEE

NRI Schools
4401 Connecticut Avenue, NW
Washington, DC 20078-3543

Be a computer programmer!

Train with a Pentium 100 Multimedia PC, featuring:

- 8 meg RAM
- 1 gigabyte hard drive
- Super VGA color monitor
- Quad-speed CD-ROM drive with sound card
- 28,800 baud fax/modem
- Visual Basic
- Power C
- Windows 95
- Netscape Navigator™ Web browser
- And more!

NEW! Internet Training!

Only NRI at-home training gives you real-world programming skills in three in-demand languages: BASIC, C, and Visual Basic, today's hot new language designed for writing popular Windows applications. Best of all, you get hands-on experience with an impressive Pentium 100 computer system you train with and keep!

NRI, the leader in at-home computer training, shows you how to take advantage of today's newest programming opportunities

Get in on the ground floor of computer programming, one of today's fastest-growing career fields. The Bureau of Labor Statistics forecasts that job opportunities for programmers will increase *much* faster than average over the next 10 years, with as many as 400,000 *new* jobs opening up by 2005.

And the fastest-growing segment of programming jobs will be PC programming, fueled by the phenomenal popularity of Windows 95, the efficient power of C, and the rise of exciting new languages like Visual Basic.

Now, with NRI at-home training, you can get the new skills you need to build a top-paying career — even a full- or part-time business of your own — in this high-growth, high-opportunity field.

Train with a full-featured Pentium 100 computer, Windows 95, Visual Basic, and more!

Right from the start, NRI's unique Discovery Learning Method gets you actively involved in the challenge of real-world programming. Step by step, you learn to create the kinds of full-featured, powerful programs today's employers and clients demand...even multimedia programs!

Your training is centered around a Pentium 100 computer with 8 meg RAM, 1 gigabyte hard drive, Super VGA color monitor, quad-speed CD-ROM drive, 16-bit sound card, 28,800 baud fax/modem, Windows 95, and more. And as an added bonus, you get the highly acclaimed Netscape Navigator™ Web browser to accompany NRI's new lessons and projects on the Internet.

Plus you explore the extraordinary capabilities of three in-demand programming languages. You learn to design, code, run, debug, and document programs in BASIC, C, and Visual Basic. Best of all, since Visual Basic is specifically designed for creating Windows applications, you learn to generate fully functioning Windows 95 programs!

No previous experience necessary

Train with NRI, and immediately start getting the money-making job skills you need to be a computer programmer — no matter what your previous background.

NRI's step-by-step lessons and hands-on programming projects help you first master the design concepts used every day by successful PC programmers. Then, with the support of your experienced NRI instructor, you quickly move on to learn programming in three of today's hottest languages.

To make it even easier to progress through your course, NRI's just established a 24-hour TeleGrading line, so you can get instant feedback on your lesson exams, and a new "cyberschool," so you can send e-mail messages to your instructor, download supplemental information, and more!

Send today for your FREE catalog

If the coupon is missing, write to us at the NRI School of Programming, 4401 Connecticut Ave., NW Washington, DC 20008. Or...

CALL 1-800-321-4634, Ext. 1802

Visual Basic and Windows 95 are trademarks of the Microsoft Corporation.

SEND TODAY FOR FREE NRI CATALOG!

NRI Schools 4401 Connecticut Avenue, NW, Washington, DC 20008

- ☑ **Check one FREE career catalog only**
- ☐ **COMPUTER PROGRAMMING**
- ☐ Networking with Windows NT
- ☐ Visual Programming in C++
- ☐ Microcomputer Servicing
- ☐ Desktop Publishing with PageMaker
- ☐ Bookkeeping and Accounting
- ☐ Multimedia Programming

OR GET YOUR DEGREE

- ☐ **New!** Associate Degree in Accounting
- ☐ **New!** Associate Degree in Business Management

Name (please print) Age

Address

City/State/Zip

A Division of The McGraw-Hill Companies Accredited Member, Distance Education and Training Council 5497-0696

Share Your *Big* Ideas

with the 29" SVGA Monitor

Exciting new *29 inch* Multi-Viewer™ monitor lets you make a really BIG statement. Designed specifically for larger audiences and distance viewing, the MVL2975XL is perfect for:

Education, Training & Presentations

Trade Show Displays & Showrooms

Video Conferencing & Distance Learning

- Super VGA multifrequency monitor
- Dual amplified speakers
- Super flat screen, double focus
- 0.75 mm dot pitch
- Up to 1024 x 768 interlaced resolution
- Two year warranty

$1,995 MSRP

MULTIVIDEO LABS

29 Airpark Road • Princeton, NJ 08540
609.497.1930 • FAX 609.497.1945
West Coast Sales 909.397.7641

Circle 154 on reader service card

Carrying "excess inventory?"

Turn your excess inventory into a tax break and help send needy kids to college.

Request a free guide to learn how donating your slow moving inventory can mean a generous **TAX WRITE-OFF** for your company.

Call 708-690-0010
Fax 708-690-0565

630 area code starting 8/3/96
Email scholar@eduassist.org

EAL

Educational Assistance Ltd.
P.O. Box 3021
Glen Ellyn, IL 60138

Excess inventory today ... student opportunity tomorrow

Choosing the Right UPS

	Volt-amp rating of UPS					
	250	400	450	600	900	1250
Your load (VA)	Typical UPS run times (minutes)					
75	29	72	88	105	155	210
100	23	47	65	79	110	160
150	14	30	41	54	83	115
200	8	19	32	41	65	92
250	5	13	24	31	47	75
300		9	18	22	40	64
350		7	14	17	35	54
400		5	11	13	29	46
450			8	10	24	40
500				7	20	34
600				5	15	25
700					13	22
800					11	17
900					10	13
1200						9

FIGURE 2: THE HIGHER THE VOLT-AMP RATING of your uninterruptible power supply, the bigger the load it can handle, for longer.

up a server or running some high-end application for which a crash is an unmitigated disaster, you usually don't need a UPS. If you decide you want one anyway—say you live in a place where power outages are frequent, for example—buy it from American Power Conversion.

Expect to spend from $200 to $500 or more for a UPS, depending on how much power your PC and its monitor draw and how much time you want to spend working while the power is out.

You'll want a UPS with a higher VA rating than the VA your monitor and PC draw together, though how much higher is up to you (see **FIGURE 2**). In any case, laser printers draw a lot of juice, so I definitely don't recommend plugging one into a UPS.

- **American Power Conversion** 800/800-4272
  Reader service no. 807

By Eric Knorr

Eric Knorr is a contributing editor for PC World *and editor and principal author of* The PC Bible *(Peachpit Press, 1995, 800/283-9444).* Hardware *welcomes your questions and pays $50 for published items.* *See page 14 for contact information.*

Worlds collide. Dogs bark. Spoons melt. And 32-bit Crosstalk with Netscape Navigator is only $69.

Introducing Crosstalk® inter.comm Suite. Now, for just $69 you can trade up to the world's most award-winning comm package — the only package that includes the latest Netscape Navigator,® version 2.0. But, please be careful wielding your power.

You'll flex every information access feature known to man — including full Internet e-mail, FTP, and Telnet support. For less than what you might pay for a browser alone, connect right out of the box to host computers, the Internet, CompuServe,® Dow Jones, and more. Plus, only Crosstalk inter.comm Suite gives you a CD with both 32-bit and 16-bit software, for blazing performance on any PC.

So bring your worlds together. For a limited time, trade in any old comm or Internet software and get Crosstalk inter.comm Suite for $69 — $110 off the retail price! All with a 60-day, money-back guarantee. Call 800-426-6283 and mention response code 446.01. For instant info, direct your old browser to http://www.attachmate.com.

Optimized for 32-bit, Windows 95 performance.

1996 Attachmate Corporation
l rights reserved. Attachmate and
rosstalk are registered trademarks of
tachmate Corporation. All other trademarks or registered
ademarks are the property of their respective owners.

Crosstalk inter.comm Suite

Attachmate
The Intranet Company

PC WORLD MARKETPLACE

For Advertising Sales

Eastern & Central Regions
(203) 857-5101

Pacific & Mountain Regions
(203) 857-5102

COMMUNICATIONS

TOOLS FOR THE DIGITAL REVOLUTION

Cellular Works is the nation's leading full-service wireless communications retailer. We've earned a reputation for providing our customers with the widest selection of high quality cellular, paging and PCS hardware including: phones, batteries, leather cases, car adapters, hands-free kits, antennas, data interfaces and more. We carry products lines by AT&T, Ora Electronics, Ericsson, Motorola, Nokia and many others.

We offer same day shipping and have knowledgeable in-house sales representatives. So whether you are across the street or across the globe, Cellular Works has the *TOOLS FOR THE DIGITAL REVOLUTION*.

Cellular Works
3380 North 28th Terrace
Hollywood, FL 33020

For a *FREE* catalog call:
(800) 571-4760 Dept EE01
–or–
To place an order call:
(800) 235-5967 Dept EE01

E-MAIL: works@cellworks.com
WEB: http://www.cellworks.com

CIRCLE 404 DN READER SERVICE CARD

TECH TOOLS

UNIVERSAL PC DIAGNOSTIC TOOL KIT

Micro-Scope is a universal PC diagnostic that runs a proprietary O/S which eliminates DOS limitations and inaccuracies. Ver.5.0 adds 125 enhancements and includes: IDE low-level format, accurate IRQ conflict display, cache memory test, 2 meg video memory test, data recovery capabilities, virus capabilities, and more!

Post-Probe is a universal P.O.S.T. reader card for the non-bootable PC. Post-Probe includes: MCA adapter, tri-state logic probe, 13 LED pre-post test, 7 segment post code display, and a manual with a full explanation of the manufacturer post codes down to the device or chip failure.

Micro 2000
1100 E. Broadway #301
Glendale, CA 91205
TEL: (800) 864-8008
FAX: (818) 547-0397

CIRCLE 457 DN READER SERVICE CARD

SECURITY

Track & Control Passwords, Access Codes, and More with Password Master

Password Master™ is the ideal application to help you remember your passwords, to store important numbers and account information and to keep confidential information confidential. *Password Master* is the only program of its kind! The "Always On Top" feature, makes it easy to locate and retrieve passwords for all the on-line sites you visit or research. It incorporates a unique "hinting" system that displays a hint rather than the actual password, providing an additional level of protection. It also uses the Data Encryption Standard (DES) to provide unparalleled security--keeping your sensitive data away from prying eyes. *Password Master* is the fast, safe and easy way to store, protect and recall your important data in one centralized location. You'll never chase down passwords or account data from multiple locations again!

Call Today! 1-800-248-4217

International Systems Inc.
International Systems Inc.
351 West Hubbard Street
Chicago, IL 60610
312-222-1364 • 312-222-9226 (fax)

Catch Us on the Net: http://www.isi.inter.net

CIRCLE 472 DN READER SERVICE CARD

UTILITIES

Only BatteryDisk Rescues Your PC from CMOS Battery Failure!

When your CMOS battery fails — and it will — your PC won't boot DOS; Windows won't load; the keyboard won't respond. But you can protect your system with **BatteryDisk**. Run the easy-to-use setup program and in just seconds, **BatteryDisk** records unique, vital data about your computer's hard drives (sectors, tracks and landing zone offset), CPU cache, bus speed, DMA Transfer mode and Shadow Memory Base settings. You don't have to be a computer genius or understand any cryptic technical computer jargon. **BatteryDisk** takes care of everything — quickly and reliably. And when your CMOS battery fails, just insert **Battery Disk**, turn on your PC and keep on working.

BatteryDisk gives you: total CMOS battery protection; safe & easy CMOS restoration; no need to pay costly emergency repair bills.

Call Today! 1-800-248-4217

International Systems Inc.
International Systems Inc.
351 West Hubbard Street
Chicago, IL 60610
312-222-1364 • 312-222-9226 (fax)

Catch Us on the Net: http://www.isi.inter.net

CIRCLE 419 DN READER SERVICE CARD

Bar Code Solutions

Videx data collection equipment is designed for work on the go. Cast-metal cases protect the products and allow them to work reliably in harsh environments.

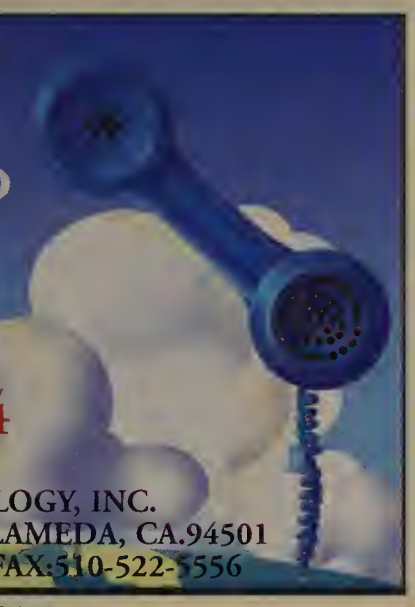
Videx Products...Built Tough...Built to Last!

Videx
1105 N.E. Circle Blvd., Corvallis, OR 97330
541-758-0521 • Fax 541-752-5285 • http://www.videx.com

Videx, On-Wand, TimeWand, DuraWand, and TouchProbe are trademarks of Videx, Inc. CC0581

CIRCLE 480 ON READER SERVICE CARD

YOU CAN REACH THE WORLD BUT CAN THE WORLD REACH YOU?



TTI PC-BASED VOICE MAIL & CALL PROCESSING SYSTEMS

1-800-934-4884

TALKING TECHNOLOGY, INC.
1125 ATLANTIC AVE. ALAMEDA, CA.94501
VOICE: 510-522-3800 FAX:510-522-5556

CIRCLE 444 ON READER SERVICE CARD

COMPUTER CHECKS

BUY DIRECT FOR LOWEST PRICES!

Laser/Inkjet

Continuous Checks and Check Savers Also Available.

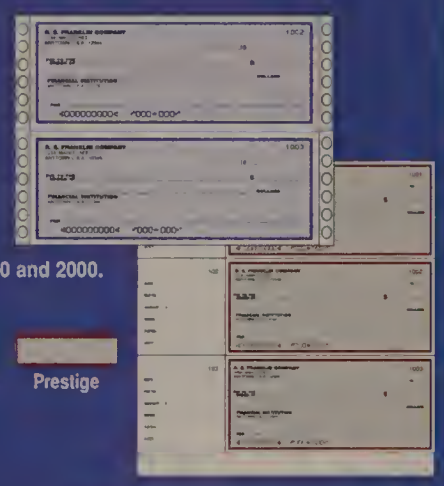
As Low as $29.95

CALL: 1-800-239-4087

FAX ORDERS: 1-800-774-1118
(PLEASE CALL FOR A FAX ORDER FORM)
MC, VISA & AMERICAN EXPRESS ACCEPTED
InterNet: http://www.hotnew.com/checks/
E-Mail: info@checks.hotnew.com

- ✔ QUICKEN
- ✔ SIMPLY MONEY
- ✔ MICROSOFT MONEY
- ✔ MANY MORE

Laser and Continuous Feed Checks available in:
- Business Size
- Business Size with Voucher
- Wallet Size



Available in Quantities of 250, 500, 1000 and 2000.
Choose From 4 Stylish Colors!

Classic Blue | Tan | Classic Green | Prestige

Designer™ CHECKS
P.O. Box 13387 • Birmingham • AL 35202

P06P04C6 • PC WORLD

CIRCLE 474 ON READER SERVICE CARD

Up to 4 Users can Access Multiple PC, Macintosh and Sun Computers from a Central Location!

- **Multiuser** — Up to 4 users can access different computers simultaneously!
- **Multiplatform** — Supports any combination of PC, Macintosh and Sun computers. Use any platform's peripherals to access any type of computer in the system.
- **Multimedia** — Every user has full multimedia capabilities; keyboard, mouse, video, speakers, microphone and high speed serial support available.

AUTOBOOT COMMANDER 4XP™

PC is a trademark of International Business Machines Corporation. Macintosh is a registered trademark of Apple Computer, Inc. Sun is a trademark of Sun Microsystems. The Inc. 500 logo is a registered trademark of Goldhirsch Group. Cybex, Commander, AutoBoot, and 4xP are trademarks of Cybex Computer Products Corporation.

Cybex Computer Products Corporation
4912 Research Drive Huntsville Al 35805 USA
1-800-932-9239 (205) 430-4030 fax
http://www.cybex.com

An Inc. 500 Company

Come visit our booth at: Spring Comdex Chicago June 3-6 Booth #W3059

CYBEX™ COMPUTER PRODUCTS CORPORATION

CIRCLE 516 ON READER SERVICE CARD

So You Wanna Be a CNE?!

4.1 CNE $895*
3.12 CNE $795*
3.12/4.1 CNE (BUNDLE) $1,590*
4.1 CNA $295*
3.12 CNA $210*
NetWare 3.12 to 4.1 Update ... $295*
4.1 Design & Implementation.... $295*

30 DAY MONEY BACK GUARANTEE!

•NetWare 4.1 Two-User •Study Guides •Videos •Audio Cassettes •NSEPro •Test Assessment •MicroHouse Demo •CNI Support

United Education Centers
50 South Main, Pleasant Grove, UT 84062
http://www.uec.com *$20 shipping

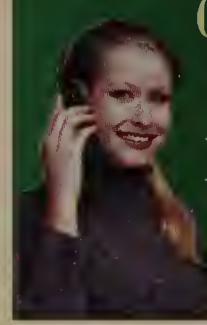
Call 800-877-4889 • EXT. 42

CIRCLE 458 DN READER SERVICE CARD

Furniture Designed By Computer Users.

COMPUTER FURNITURE DIRECT

- Delivered & set up in your home or office.
- 16 desks delivered from $419.
- Factory direct savings.
- Guaranteed.



Call today for your Free Catalog!

1-904-565-1163

Web Site: www.cf-direct.com

Please refer to ad code: PCW696

CIRCLE 495 DN READER SERVICE CARD

GETTING ON THE WEB?

Then Get MULTIMEDIA WORLD

Try a Risk-Free Sample Issue

If you like it, pay the invoice & receive 11 more issues (12 in all) for only $17.97 - SAVE more than 69% off the newsstand rate!

Order Toll-Free 1-800-766-3294

www.mmworld.com

RECORD CDs

Don't Pay The High Price For Speed!

2X/4X CD-R "CONVENIENT TRAY LOAD" BUNDLE $799

Includes:
Easy To Use CD Creotion Softwore
- Archiving Is A Breeze
- Customize Your CD Jewel Cases
- Great For Creating Audio Cds
- Truly Eosy To Use

YAMAHA 4X MULTIMEDIA BUNDLE $1299

Includes:
Multimedia CD Creation Software
- Archive Onto CDs
- Distribute Multi-platform CDs
- Create True Audio & Video CDs
- Duplicated CD's

MAXOPTIX-2.6 GB MO-$CALL
IOMEGA JAZ - 1 GB - $599

OPTICAL BLOWOUT

128MB... $12.99
230MB... $17.99
650MB Optical ... $39.99
1.3GB Optical ... $49.99

SYQUEST

44MB...$33 • 88MB...$37 • 200MB...$70
105MB...$35 • 270MB...$56

ZIP & JAZ

ZIP 100MB...$16 • JAZ 1GB...$117

CD-ROM CHANGERS

7 CD CHANGER 4X SPEED $329.99

CD-R BLANKS

AS LOW AS $6.99

Verbotim, Sony or Mitsui
74 Minute • 4X & 6X Cert.

NEVER UNDERSOLD GUARANTEED

CD LABELING KITS $79

MEDIASTORE
SERVING AMERICA'S STORAGE NEEDS...FOR LESS!
800-555-5551
ph.714-997-5551 + fx.714-997-5553
http://www.mediastore.com

VISA · MasterCard · AMERICAN EXPRESS · P.O.s

CIRCLE 466 DN READER SERVICE CARD

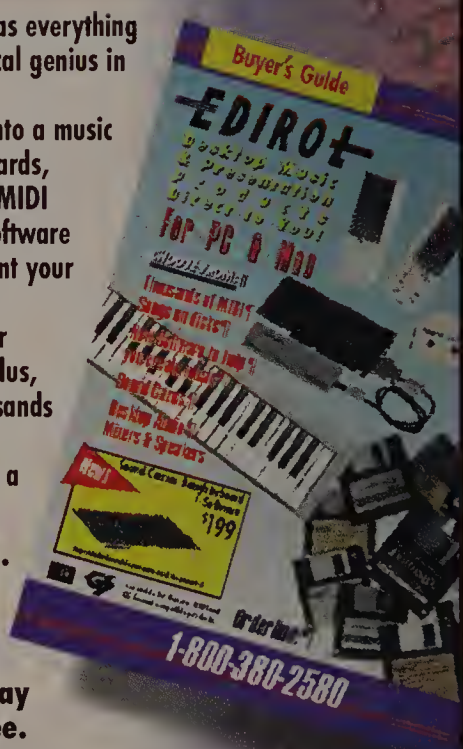
Can Your Desktop Face The Music?

The Edirol Buyer's Guide has everything you need to unleash the musical genius in you and your PC or Mac.

Transform your computer into a music studio, complete with sound cards, speaker systems, keyboards, MIDI synthesizers, and the latest software for helping you create and print your own music.

Discover music solutions for school and home education. Plus, choose from a library of thousands of MIDI songs on disk.

And it's yours for less than a song – it's FREE!



New Software Releases.
Full Upgrade Kits Available.
Competitive Pricing.
Direct Shipping & 30 Day Money Back Guarantee.

FOR FREE BUYER'S GUIDE CALL:
1-800-380-2580

EDIROL
Edirol Corp.
1201 Fourth Ave. South, 3rd Floor, Seattle, WA 98134

CIRCLE 489 DN READER SERVICE CARD

TOTAL INTERNET ACCESS

$15 PER MONTH

UNLIMITED! UNCENSORED!

File Edit View Go Bookmarks Options Directory Help

IDT WEB BROWSER

Save up to 99% monthly with IDT!

Daily Internet Usage:	IDT Unlimited/Unltd.Plus	AOL	Prodigy	Compuserve
1.5 Hours	$15/$29	$127.95	$74.20	$73.70
3 Hours	$15/$29	$260.70	$206.95	$161.45
All Day	$15/$29	$2,119.20	$2,065.45	$1,389.95

Why pay through the nose to access the Internet with that big, bland on-line service?
(Especially since they censor what you can see and do.)

- IDT believes you have the right to unregulated and uncensored information and entertainment.
- For $15 monthly we deliver unlimited and uncensored usage with free customer support.
- We also provide free Netscape™ the ultimate WEB browser with every Unlimited IDT account.
- Plus, it's almost always a local call.

To sign up/get information call anytime:

1-800-743-4343

IDT

✓NO PER MINUTE CHARGES
✓ALMOST ALWAYS A LOCAL CALL
✓UNLIMITED E-MAIL

CIRCLE 424 ON READER SERVICE CARD

"The #1 PC Desk."

1.800.688.2446

agio DESIGNS™ Fax:503.690.1423 support@agio-designs.com

CIRCLE 443 ON READER SERVICE CARD

BUY OPTICAL DIRECT FOR LESS!

Pinnacle Micro Factory Blow-Out Sale!

#1 Selling Recordable CD System!

RCD 1000™ External $999

2X Recorder/Player · External, includes hardware & software, PC/Mac

RCD 1000™ Internal $899

2X Recorder/Player · Internal, includes hardware & software, PC/Mac

RCD 202™ $399

1X Recorder/Player, includes hardware & software, PC/Mac

Tahoe 130 MB™ $299

3.5" 130 MB Portable, ISO/ANSI standard, Mac/PC/Unix
Perfect for users on the go!

Tahoe 230 MB™ $499

3.5" 230 MB Portable, ISO/ANSI standard, Mac/PC/Unix
Perfect for notebook/desktop computing!

Lowest Price!

RCD Media
74 minute · 650 MB
$5.99

Sierra L3 GB™ $1399

5.25" 1.3 GB optical hard drive, ISO/ANSI/ECMA standard, Mac/PC/Unix
Award-winning performance!

OPTICAL MEDIA

128 MB Media	$13.99
230 MB Media	$18.99
650 MB Media	$44.99
L3 GB Media	$54.99

VISA

Call & Order Direct Toll Free
800-726-3030
Phone: 714-789-3111 • Fax: 714-789-3136

FACTORY DIRECT OUTLET

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY

We guarantee the lowest price. Product may consist of remanufactured, recertified components as new or B Stock. Full 90 day limited warranty. All sales are final.

CIRCLE 471 ON READER SERVICE CARD

SVGA Splitters

HRT
HALL RESEARCH TECHNOLOGIES
800-959-6439
714-641-6607 fax: -6698
1506 Brookhollow Dr.,
Santa Ana, CA 92705

Celebrating Our 12th year!

Toll-Free Support
One Year Warranty
Quantity Discounts

- Display your PC's screen on many monitors simultaneously
- Perfect for demos, training and remote monitoring
- Proven wideband amplifier assures bright and crisp image - GUARANTEED!
- Automatically access one PC from two keyboards with ease
- Quality monitor and keyboard extension cables available to 500 feet
- Exclusive video switches, multiplexers and other unique products

CIRCLE 459 ON READER SERVICE CARD

Custom Fast 20 SCSI Tools

SCSIVue™ Active Terminator

Optional Remote Display

Benefits:
- Improves SCSI Bus Performance
- Less Errors; More Reliable Data Transfer
- Diagnoses Problems • Analyzes Signal Quality

Features:
- Active Regulation • Fast 50 & Fast Wide 68
- Status Indicators • Gold Contacts

From: $59

SCSIVue™ Gold Diagnostic Cables

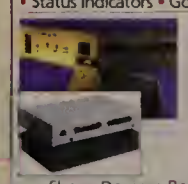
Benefits:
- No Loss Of Important Data
- Faster Performance
- Test Cable Integrity

Features:
- Diagnostic Indicators • Large Ferrite Filters
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Extra Heavy 26 Gauge Wire • 40 Styles in Stock

From: $39

SCSI 2+3 COMPATIBLE

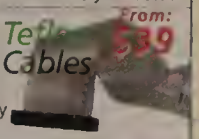
SCSIVue™ 2-1 Active SCSI Switch



Benefits:
- Share Devices Between 2 Computers
- Up to 14 Devices to 1 Computer

Features:
- 2-1 Active Digital Switch/Repeater
- Regenerates SCSI Signal for Long Runs

SCSIVue™ Custom Terminated Internal Cables



From: $39

Benefits:
- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality

Features:
- Perfect 90 Ohm Impedance Match • Custom in 1 Day
- Triple Pronged Connector With Gold contacts Silver Wire

Granite D•I•G•I•T•A•L
The SCSI Solution Company
Ph: 510-471-6442 Fax 510-471-6267
3101 Whipple Rd Union City, CA 94587

CIRCLE 454 ON READER SERVICE CARD

CALL TODAY.
Project tomorrow.

The Instant Access Rental Program.

Now you can rent full-color projectors and panels from In Focus Systems, the leader in LCD projection. It's the affordable, risk-free way to discover the impact of electronic presentations.

- Simply plug into PCs, Macs and VCRs.
- Portable, multimedia and high-resolution units available.
- Call today by 8 p.m., we'll have one on your desk tomorrow.

InFocus® SYSTEMS

Call today: 1-800-294-6400

PCWD-IA ©1996 In Focus Systems, Inc. Phone: (503) 685-8888 Fax: (503) 685-8631 Internet: http://www.infs.com

CIRCLE 486 ON READER SERVICE CARD

We Want to Send You a

FREE!

268 PAGE CATALOG OF DISCOUNT COMPUTER SUPPLIES & ACCESSORIES

Plus!

We will add you to our mailing list for one year on a trial basis – in which time you will receive 4 catalogs from the most unique company in our industry.

LYREN COMPUTER SYSTEMS

5545 Bridgewood, Sterling Heights, MI 48310

CALL US TOLL-FREE (800) 493-5777 *or* Fax (810) 268-8899

Simply utilize the reader service number below – or call, write or fax us for your free catalog.

CIRCLE 491 ON READER SERVICE CARD

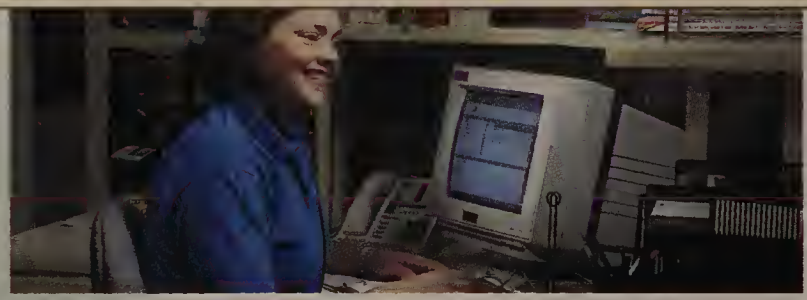
Beacon™ 2500

$6,499

500 Lumens!

The new standard for brightness and value in conference room LCD projectors!

- True 500 ANSI Lumens!
- Auditorium or full room light use!
- Remote power Zoom & Focus
- 2 PC inputs, 2 video, 4 audio
- Biggest, brightest image anywhere!



"Boxlight sells more electronic projection systems, to more people than anyone. Call to find out why."

ColorShow™ 2000+

ONLY $3,999

The first, and still the only TFT active-matrix projector you can buy for under $4,000!

- Sleek, compact & stylish design
- Less than 20 lbs. travel weight
- Includes free remote control

Limited Time! $1,999

ProColor™ 1301

TFT Active Matrix Color for under $2,000

- Save $1,000 on our Best Seller!
- Lightweight, reliable, rugged design
- Mac or PC, optional video & audio
- Easy-menu, zoom, freeze, pointer

As the most trusted name in Presentation Electronics™, we offer:

- Dialog with knowledgeable people who really help
- More than 50 models to choose from, available now
- Overnight shipping to multiple world-wide locations
- Money-back 30-day guarantee
- Free lifetime tech support

Monday through Friday, 6am — 5pm, Pacific Time. Purchase orders accepted (some restrictions). Leasing and rental options available. Prices subject to change. Quantities may be limited to stock on hand.

http://www.boxlight.com

Call BOXLIGHT today 1-800-762-5757

BOXLIGHT™ DIRECT

Government: (800) 497-4009
Resellers: (800) 736-6956
International: (360) 779-7901

Rental: (800) 736-6954
Fax: (360) 779-3299
Education: (800) 689-6676

PR2

The Inc. 500 logo is a registered trademark of Goldhirsh Group, Inc.

An Inc. 500 Company

CIRCLE 511 ON READER SERVICE CARD

www.imagers.com

indigo™

print only what you need!

DIGITAL OFFSET COLOR™

PC/Mac Files
Go Direct
To The Digital Press

Short-Run 4-Color Offset Printing
Brochures, Press Kits, Product Literature,
Business Cards, Newsletters, Phone Cards
- Send files - FTP • ISDN • BBS
- 24-48 hour on-demand service
- Expert Customer Support Team

Kodak PHOTO CD SERVICE PROVIDER

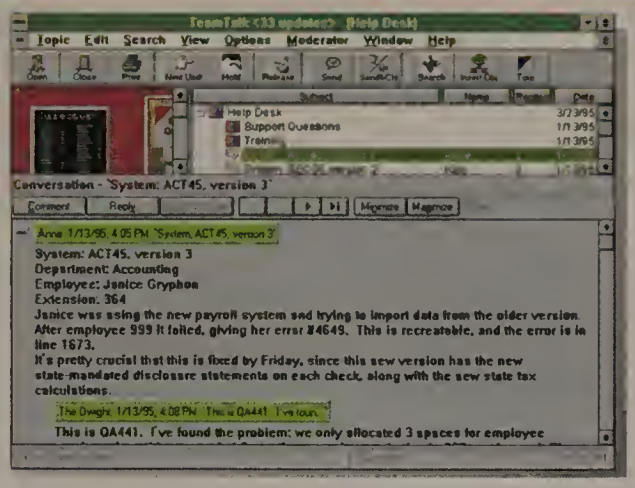
Pro/$8 • 35mm Master/$.90

Professional Output Services
Slides & Overheads, Dye-Sub Color Prints
Huge Color Posters, 4x5 Format Imaging
Canon Digital Lasers, MultiMedia Services

IMAGERS®
Overnight Digital Services
800-774-7216 or 404-351-5800
1575 Northside Drive Suite 490 Atlanta GA 30318

CIRCLE 409 ON READER SERVICE CARD

Groupware for the Masses



TeamTalk is the most easy-to-use group discussion available. It installs in minutes and requires no training to get your users up and running. Yet it still offers the powerful capabilities you need and works with your existing systems.

Call today for your free evaluation package or demo disk.

800-367-8729

TeamTalk™
Groupware that Works.

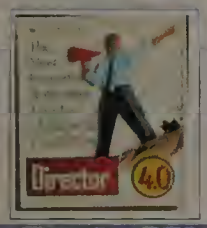
Trax
Trax Softworks, Inc. 800-367-8729 310 649 5811 info@traxsoft.com
http://www.traxsoft.com/trax-soft

CIRCLE 504 ON READER SERVICE CARD

Student - Teacher & School Discounts!

LATEST VERSIONS & FULL PACKAGES

QuarkXPress 3.32 $279


Director 4.04 $589

Coda Finale 3.5 $249

4Th Dimension 3.5	$449	Freehand Graphic Studio	$449	Printshop Deluxe 2.0	$55
ABC Graphics Suite Win 95	$149	Harvard Graphics 4.0	$149	Perfect Office 3.0 Pro	CALL
Animator Pro 1.3	$195	Idea Fisher Pro 6.0	$75	QEMM 8.0	$49
Animator Studio 1.1	$169	Infinite FX	$65	QuarkXPress Passport 3.3.2	$349
Archicad 4.5.5 Student	$495	Inspiration 4.0	$89	RamDoubler 1.0	$55
Astound 2.0	$99	JMP 3.1	$329	Ray Dream Studio 1.0	$219
Authorware Pro 3.0 Win/Win95	$975	Kai's Power Tools 3.0	$85	Smartsuite 96 for Win 95	$175
Borland C++ 5.0	$149	KPT Convolver 1.0	$85	Sound Forge 3.0	$249
Canvas 3.5.2	$99	KPT Power Photos 1,2 or 3	$85	Spanish Power Translator Dlx	$99
ChemDraw Pro 3.5	$149	Laplink for Windows/Win 95	$115	Strata Studio Pro 2.0	$469
Claris Draw 1.0	$119	Lotus 1-2-3 5.0/Word Pro 96 Bndl.	$99	ScanMan Color w/OCR	$199
Clipper 5.3	$99	M.Y.O.B. 6.0 for Windows	$49	The Black Box 2.0	$75
Corel Draw 6.0	$269	M.Y.O.B. 6.0 for Win w/ Payroll	$90	Trispectives Pro 1.0	$149
Dabbler 2.0	$45	Mathcad 6.0 Plus	$149	True Space 2.0	CALL
Delphi Desktop 2	$99	Mathematica 2.2.4 Student	$149	Turbo C++ 3.0	$59
Deltagraph Pro 4.0	$95	Media Forge 2.0	$469	Turbo Pascal 1.5	$79
Director Multimedia Studio 1.5	$1175	Media Paint 1.1	$199	Vellum 3-D 2.7	$595
DrawingSlate II 12x12	$219	Minicad	$319	Visio Technical 4.0 w/CD-ROM	$199
Elastic Reality 1.0.1	$219	Minitab Release 10XTRA	$199	Visual Objects 1.0B	$179
Encore 4.0.4	$249	Multimedia Toolbook 4.0	$479	Wacom Art Pad II 4x5	$135
Extreme 3-D	$199	Okidata OL400E LED Page Printer	$375	Wacom Art Z II 6x8	$285
Fast Track Schedule 4.0	$139	OS/2 Warp 3.0	$69	Walkthrough Pro 2.5	$229
Filemaker Pro 3.0	$129	Omnipage Pro 6.0 Bundle	$209	Win Academy Tutorial Videos	$35
Fontographer 3.5	$149	PageTools 2.0	$79	Word Perfect 6.1	CALL
Freehand 5.0	$189	Poser 1.0	$99	XRES 2.0	$199

Autocad LT 2.0 $339

Fractal Painter 4.0 $219

3-D Studio 2.01A $195

*SAME DAY SHIPPING ON MOST ITEMS.
*SCHOOL PURCHASE ORDERS WELCOME.
*NO SURCHARGE ON CREDIT CARDS.
*IBM & MAC PRODUCTS AVAILABLE.
*ADOBE, SYMANTEC & MICROSOFT PRODUCTS AVAILABLE TO QUALIFIED STUDENTS, TEACHERS AND SCHOOLS.

PHONE
(800) 289-3275

WE WILL BEAT ANY ADVERTISED PRICE !

CALL FOR FREE CATALOG!!
(800)289-3275
INCLUDES COMPLETE PRICE LIST & FREE PRODUCT LITERATURE

The SOFTWARE Source
THE SOFTWARE SOURCE CO, INC.
2517 Hwy 35, Bldg L, Manasquan NJ 08736
Phone (908) 528-0030 Fax (908) 528-9378

VISA MasterCard DISCOVER

CIRCLE 473 ON READER SERVICE CARD

NO RISK 30 DAY COMPATIBILITY GUARANTEE

Memory Is Our Only Business

We give you a lifetime warranty, *guaranteed lowest price, guaranteed compatibility and 99% of all our orders are shipped in 24 hours!

Specials

4x32-70ns 16Meg 72pin $278
2x32-70ns 8Meg 72pin 125
4x3-70ns 4Meg 30pin 85

SIMMS

72 Pin	Parity/Non Parity	80ns	70ns	60ns
2 meg	512x36/32	50/48	55/53	75/73
4 meg	1x36/32	72/62	74/64	84/74
8 meg	2x36/32	135/120	139/125	159/139
16 meg	4x36/32	320/275	324/279	344/299
32 meg	8x36/32	—	599/649	729/649
64 meg	16x36/32	—	1620/1720	—

30 PIN		100ns	80ns	70ns	60ns
256x9	(3 chip)	$6	7	8	—
1x9-1mb	(3 chip)	—	27	27	34
1x9-1mb	(9 chip)	19	25	29	39
4x9-4mb	(3 chip)	—	85	85	99
4x9-4mb	(9 chip)	—	99	99	114
16x9	(9 chip)	—	—	349	—

LIFETIME WARRANTY

Notebook Memory

Mde	4MB	8MB	16MB	32MB
AST (all models)	$152	279	549	—
Compaq (all models)	152	279	569	—
DEC (all models)	146	294	593	—
Dell (all models)	159	285	589	—
Epson (all models)	154	277	569	—
IBM (all models)	158	279	589	Call
NEC (all models)	158	289	569	1199
Texas Instr. (all models)	183	277	Call	Call
Toshiba (most models)	159	287	569	Call

Video Memory

	80ns	70ns	60ns
256x4 Dipp	$6	7	8
256x16 SOJ	—	29	—
256x16 ZIPP Cas	—	39	—

Desktop Memory

Model	4MB	8MB	16MB	32MB
AST Memory				
AST Advantage, Adventure	89	148	299	685
AST Bravo	89	148	299	685
AST Premium 386 & 486	99	178	—	—
AST Premmia	—	178	299	685
Compaq Memory				
Compaq Deskpro	CALL	CALL	CALL	CALL
Compaq Presario	99	184	369	745
Compaq Proliant, Prolinea, Prosignia	99	184	369	745
Compaq Sytempro	109	219	409	799
Dell Memory				
Dell Dimension	89	148	299	685
Dell Performance	99	198	369	745
Dell Optiplex	89	148	299	685
Dell Omniplex	99	198	369	745
IBM Memory				
IBM Aptiva	89	148	299	685
IBM Eduquest	99	198	369	745
IBM PS1 Valuepoint	99	198	369	745
IBM PS1 Consultant	99	198	369	745
IBM PS2 (series 30 through 90)	99	198	369	745

Printer Memory

Model	1MB	2MB	4MB	8MB
Epson AL1000, 1500:	—	$89	178	—
HP IIP, III, IIIP, IIID:	—	84	149	—
HP II, IID:	—	84	149	—
HP 3SI, 4, 4M, 4SI, XL300, DJ1200C	—	79	133	265
HP 4L:	47	—	—	—
HP DJ 500 Series (256K)	39	—	—	—
HP 4P, 4MP, Color LJ, 5P	—	79	133	—
HP 5L	—	—	149	279
OKI 400:	—	94	—	—
OKI 400E, 410E	—	112	194	—
TI ML, XL	49	—	—	—

Cache Memory

	25ns	20ns	15ns	12ns
8Kx8	$4	5	6	—
32Kx8	7	8	8	15
32X8(3.3)	9	10	10	17
64Kx1	7	8	9	—
64Kx4	7	8	9	—
16Kx4	5	6	7	—
64x8	—	13	15	—
128Kx8	25	30	35	—

EDO Memory 72 Pin

	70ns	60ns
4Meg	$68	78
8Meg	135	145
16Meg	339	349
32Meg	719	739

*verified in this magazine

AVALON MICRO

688 Unit D, Wells Rd., Boulder City, NV 89005

(800) 610-1214

Hours: Mon. - Fri. 7-5, Sat. 8-1 PST

Phone (702) 293-2300 Fax (702) 293-4453

MasterCard VISA DISCOVER

Conditions: Shipping is non-refundable. 20% restocking on all refunds. All products returned for refund must be in new condition and in original packaging. No refunds after 30 days. Warranty exchange only. RMA# required. Prices subject to change. All prices are final. Trademarks registered with their respective companies. C.O.D. Cashier's Check - add $5.00 C.O.D. Company Check upon approval. Net terms to qualified customers. Shipping 1st 5lbs $9.25

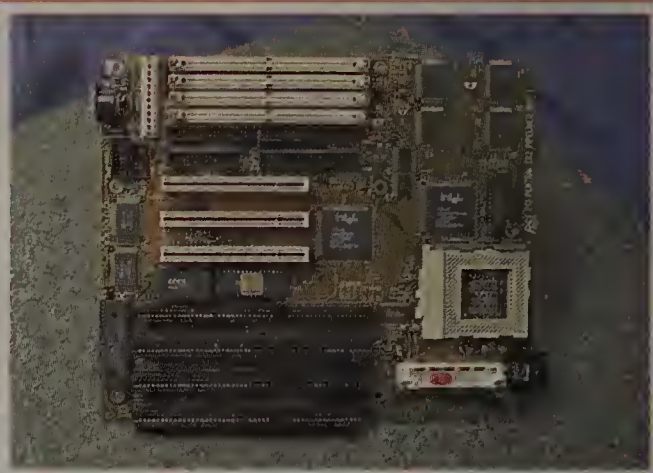
CIRCLE 456 ON READER SERVICE CARD

THE FINEST PC CIRCUIT BOARDS!!!

HSB COMPUTER LABORATORIES

the nations largest full-line PC circuit board specific manufacturer and distributor caters to individuals and businesses interested in only the finest hardware and service at the best price, provided by a long term, financially stable company. For nearly a decade, we at HSB have earned our standing as the most reputable circuit board manufacturer & distributor in the industry. Don't make the mistake of buying 'Throw-Away' circuit boards from a company without any long term commitment to your satisfaction. If we sound like what you are looking for, please give us a call at

(800) 497-0401



-HSB MS5120PC Series 64-Bit PCI Bus MainBoard

CUSTOMER SATISFACTION...

- A comprehensive 72 hour burn-in. We will not ship any board that does not perform flawlessly.
- A full 3 year warranty on all HSB made circuit boards, covering 100% of both parts and labor.
- A limited lifetime warranty on all 45ns 'Turbo' SIMM memory modules and all PGA CPU's.
- A 60-day money-back guarantee. Ensuring that you can't find a better circuit board value.

-HSB 45ns 'Turbo' SIMM memory modules

INNOVATIVE PRODUCTS...

- HSB 486/5X86 PCI, On-Board EIDE, 256KCC, AMI PnP WinBIOS....*$CALL*
- HSB Pentium® Processor-Based PCI MB, On-Board EIDE, 256KCC, AMI PnP FLASH WinBIOS.....*$CALL*
- HSB Pentium Pro® Processor-Based PCI MB, On-Board EIDE, 256KCC, AMI PnP FLASH WinBIOS.....*$CALL*
- HSB 45ns 72-pin EDO 'Turbo' SIMM Memory Module.....*$CALL*

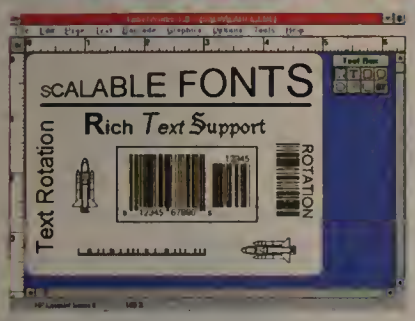
Pentium and Pentium Pro are registered trademarks of Intel Corporation.

Please call anytime for a free, full color, wholesale product guide and catalog. [Local] 216-498-1356 [Fax] 216-498-1374, 34208 Aurora Road #297, Cleveland, OH 44139

The Next Generation in Label Design Software

LABELWORKS™

for Windows



LabelWorks sets the new performance standard for professional quality label design. No other program combines such easy operation with this much power!

- Provides Desktop Publishing features to enhance label design. Features include: WYSIWYG, rulers, guides, page zooms, lines, shapes.
- Rich text support allows you to edit font styles, types, and sizes within the same line.
- Supports all major Bar Code symbologies, including Code 39, 93, 128, POSTNET, UPC, Bookland EAN. 19 types in all.
- Imports & Exports using TIFF, GIF, BMP, PCX, WPG, WMF, TARGA graphic files.
- Rotates Text, Bar Codes and imported graphics in 90 degree increments.
- Prints labels on virtually any windows supported printer.
- Prints labels directly from dBase, DIF & ASCII files.

Dealer Inquires Welcome.

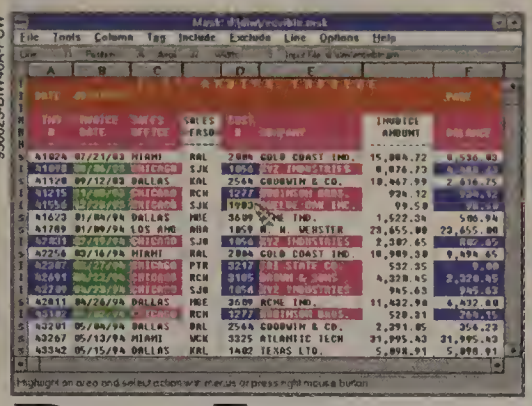
Call for Free DEMO Software

AMERICAN MICROSYSTEMS, LTD.
2190 Regal Parkway, Euless, TX 76040

(800) 648-4452 (817) 571-9015 FAX (817) 685-6232

IMPORT DATA FROM ANY COMPUTER REPORT INTO:

950023-DIW40A-PCW



Access
Excel
dBase
1-2-3
Paradox
FoxPro
Approach
Quattro
Clarion

DataImport™ 4.0 for Windows™

Go beyond the limitations of import wizards and parsers. Get TOTAL CONTROL of your data! With DataImport you can **selectively import data** from columnar and non-columnar text-based reports, dynamically clean-up reports, create data files in 37 output formats or add data to existing files. DataImport does it all. Call today!

$189 single user $495 5-user LAN

SPALDING SOFTWARE

(770) 449-0594
Fax: (770) 449-0052
email: di-pcw@spaldingsoft.com
http://www.spaldingsoft.com
CIS: GO SPALDING, Lib 2, diwtd.zip

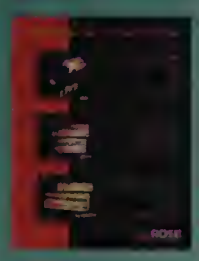
FREE DEMO ONLINE OR CALL

CIRCLE 434 ON READER SERVICE CARD

Lose 500 pounds in 10 minutes

See Us at:
Spring Comdex, Chicago, IL
June 3 - June 5
Booth #C5129
And at:
PC Expo, New York, NY
June 18 - June 20
Booth #2221

with a Rose keyboard monitor switch



Call today for free catalog

- Print servers
- Data switches
- Keyboard/video control

800-333-9343

Streamline your computer room by reducing excess equipment. Access up to 256 CPU's from a single keyboard, monitor, and mouse. ServeView is our best-selling switch, has every feature you can imagine, and installs in minutes. Compare price, features, performance, quality, and support and you'll find Rose can't be beat.

P.O. Box 742571 ◆ Houston, Texas 77274
TEL 713/933-7673 ◆ FAX 713/933-0044

Call us to discuss your application or to receive your free information kit.

ROSE ELECTRONICS

CIRCLE 414 ON READER SERVICE CARD

BAR CODE

BAR CODE READERS

AMERICAN MICROSYSTEMS

2190 A Regal Pkwy. • Euless, Texas 76040 • (817) 571-9015

VISA AM EX MasterCard

FOR PC, XT, AT, PS/2 & TERMINALS:

- No software changes required
- Data appears as keyboard input
- Reads Code 39, I-2of5, UPC/EAN, Codabar, 128, 93, 11, MSI/Plessey
- Auto-discriminates between codes
- Accepts WAND, SLOT, CCD, LASER, MAG STRIPE

DECODER BOX

BAR CODE PRINTING SOFTWARE:

- For Epson, OKI, IBM, Dot Matrix and HP LaserJet Printers
- Prints Code 39, I-2of5, UPC/EAN, Codabar, 128, 93, 11, MSI/Plessey
- Easy To Use

MAG STRIPE · SLOT (BADGE) · WAND · LASER · CCD

(800) 648-4452 • FAX: (817) 685-6232

30 Day Money Back Guarantee

One Year Warranty

PC WORLD delivers the buyers you need to reach.

81% determine the need for products & their features.

Call for details: (203) 857-5101 or (203) 857-5102

EDUCATION

Make Money

Building & Upgrading PCs

Become a PC technician in a couple of days, *not weeks*. Amazing intensive fast paced course is based on clear easy to understand videos.

Includes:

- Two VHS Video Tapes
- Anti Static Wrist Strap
- Professional Repair Kit
- Workbook
- Electronic Computer Glossary
- Ongoing Tech Support

Entire Course Only $159

LEARNING PC SERIES

PC Learning Series
40 New Plant Road
Owings Mills, MD 21117

1-800-659-8070

Satisfaction & Success Absolutely Guaranteed!

CIRCLE 500 ON READER SERVICE CARD

PROGRAMMING

Lahey Fortran

Lahey's award-winning PC Fortrans are ideal for writing new code or downsizing your legacy programs.

•

Lahey's 32-bit Fortran 90 Version 2.0 includes a suite of development tools, Pentium and P6 optimizations, and the ability to create Window applications (Win 3.x, Win95, NT).

•

Other products: 32-bit FORTRAN 77, Lahey Personal FORTRAN 77, and Elf90.

(800) 548-4778 or (702) 831-2500
Fax: (702) 831-8123
email: sales@lahey.com

CIRCLE 470 ON READER SERVICE CARD

BUSINESS APPLICATIONS

The Data Entry Emulator™

Full featured, heads-down data entry, with...

- Two-pass verificotian
- Powerful editing copobility
- Easy output reformatting
- Paint the screen formotting
- Supervisor & batch contral
- Custamizoble menus
- Operator statistics
- Key from Images (NEW!)
- Tutarial exercises

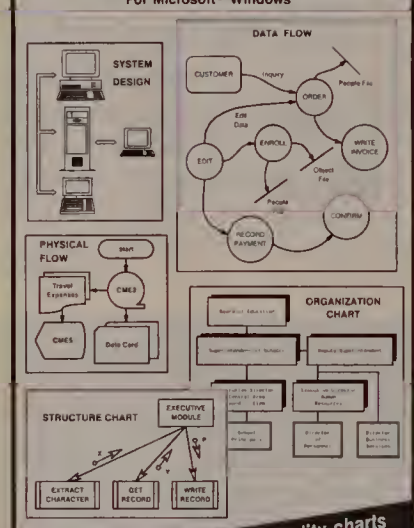
FREE 30-day trial

PC | PC LAN | S/36 | AS/400

COMPUTER KEYES
21929 Makah Rd.
Woodway, WA 98020
Fax: 206-776-7210
Tel: 206-776-6443
USA: 800-356-0203

RFFlow

Professional Flowcharting
For Microsoft® Windows™



Create professional, fine quality charts quickly and easily. Call for free trial disk: (970) 663-5767 FAX (970) 669-4889

$ 79.00

RFF ELECTRONICS
1053 Banyan Court, Loveland, CO 80538

MAIL ORDER

The Mail Order Wizard

Everything you need to manage your mail order company in one software package! Features include:

- order processing
- inventory management
- ad forecasting
- list management
- charge approval/capture
- UPS/USPS manifest with bar coding, and much more.

Single and multi-user systems available. Call our sales reps for a demo kit.

The Haven Corporation
1227 Dodge Avenue, Dept. PWC5
Evanston, IL 60202
(800)676-0098 (708)869-3434

Mail Order Manager (M.O.M.)™

America's most popular, complete, and affordable solution for the mail order business - order entry/review, credit card processing with draft capture, UPS manifesting, profit analysis, accounting, telemarketing, list management. Clipper compiled, dBase III + files. Single and Multi-user versions. Find out why more people buy MOM after comparing! Call for demo kit.

Dydacomp Development Corporation
150 River Road, Suite N1, Dept. PCW
Montville, NJ 07045
(800)858-DMOM (201) 335-1256

BUSINESS APPLICATIONS

CHURCH SOFTWARE

Discover for yourself why more churches are choosing **PowerChurch Plus.®**
Try out the leading membership and accounting package.
Call today for Free information in the mail.

F1 Software, 208 Ridgefield Drive, Asheville, NC 28806
800/486-1800

CIRCLE 482 ON READER SERVICE CARD

SERVICES/SUPPLIES

MIRROR IMAGES

DISKETTE DUPLICATION

Superior duplication . . .
Your reputation depends on it.
Our reputation assures you of it.

- ALL DISK FORMATS
- FAST 24 HOUR TURNAROUND
- EXCEPTIONAL PRICING AND SERVICE

Call for more information and quotation.

800-322-0577
OHIO - NEW JERSEY

SERVICES/SUPPLIES

1-800-8-GLOBAL

GLOBAL®

FREE catalog

228 page guide to computer furniture, supplies & accessories

COMPUTER SUPPLIES
11 Harbor Park Dr.
Dept. 94 PCW
Port Washington, NY 11050

CIRCLE 508 ON READER SERVICE CARD

We can save it!

DRIVESAVERS® DATA RECOVERY

800 440-1904

All storage devices • All platforms
Since 1985

www.drivesavers.com

400 Bel Marin Keys Bl., Novato, CA 94949
Fax: 415 883-0780 Phone: 415 382-2000

CIRCLE 431 ON READER SERVICE CARD

SECURITY

Over eight million in use worldwide

The world's most effective way to stop piracy and increase your software sales

Sentinel® keys protect more software than all others combined.

Only Sentinel combines leading technology, ISO certified quality and the industry's best reliability in one affordable key.

What's more, Sentinel protection is easy to implement and transparent to your software customers.

Call now for your FREE *Sentinel Software Protection Guide.*

Order your Sentinel Developer's Kit today!

Featuring the Sentinel CD-ROM, it's the easiest way to ensure your sales

SENTINEL
Software Protection

Call (800) 852-8569

RAINBOW TECHNOLOGIES

Visit us at: http://www.rnbo.com
Tel: (714) 450-7300 • Fax: (714) 450-7450
Offices & distributors located worldwide

©1996 Rainbow Technologies Inc. Sentinel is a registered trademark of Rainbow Technologies

CIRCLE 411 ON READER SERVICE CARD

SERVICES/SUPPLIES

SINCE 1989, WE'VE PUT MORE LIVES BACK TOGETHER THAN OPRAH, DONAHUE AND DR. RUTH COMBINED.

They aren't just documents and files. They're your life. And that's the way we treat them when you come to us for data recovery. Our vast experience covers platforms for Macintosh, OS/2, DOS, Win95, Novell and UNIX and we are recommended by most major drive manufacturers. While we can't make any guarantees, we can tell you that our data recovery techniques are so advanced we recovered 99% of our client's data 96% of the time. We can do the same for you, too. Quickly, efficiently and painlessly. So, the next time you experience data loss, give us a call. We'll help you make the most of a bad situation.

TOTAL RECALL DATA RECOVERY
2462 Waynoka Road
Colorado Springs, CO 80915
(800) 743-0594 • (719) 380-1616
(719) 380-7022 fax

CIRCLE 437 ON READER SERVICE CARD

UPGRADES/MEMORY

WE'LL PAY *YOU* FOR YOUR OLD MEMORY

1x9, 4x9, 30 Pin, 1x32, 2x32, 4x32, 1x36, 2x36, 4x36, 8x36, 72 Pin

TRADE-IN **$ ANY SIMMS $** UPGRADE

NOTEBOOK, LAPTOP, SUBNOTE, CREDIT CARD (IC DRAM) MODULES

ALL MEMORY HAS VALUE

WE NOW BUY & SELL CPU's

OVER 30 YEARS EXPERIENCE

SOJ TSOP ZIP DRAM, VRAM IBM

THE MEMORY LIQUIDATORS

"The company that buys memory back"

1-800-718-7755

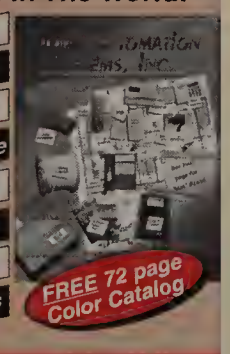
531 Main St., Ste.1174, El Segundo, CA 90245 • Ph. 310-326-5656 • Fax 310-326-7790

SOFTWARE GENERAL

COMPUTER CONTROL OF YOUR HOME!

Largest Selection of Home Automation in The World!

X-10
Audio/Video
Security Systems
Video Surveillance
Phone Systems
Heating/Cooling
Lighting
Automatic Feeders



FREE 72 page Color Catalog

Widest Range of X-10 Devices

Call **800-SMART-HOME**

24 Hours 800-762-7846 *FAX* 714-708-0614

E-mail: catalog@smarthome.com
http://www.smarthome.com/smarthome

HOME AUTOMATION SYSTEMS, INC.
151 Kalmus Dr., Ste. L-4
Costa Mesa, CA 92626
Questions: 714-708-0160

CIRCLE 490 ON READER SERVICE CARD

Software Blowout

1000's of low cost programs
Call for **FREE** catalog
MSDOS 6.22 $30; Mathblaster $20
QEMM 7.0 $25; Faxworks Pro 3.0 $20
Falcon Gold CD $30; Corel Draw 4.0 $100
Corel Draw 6.0 $400; ACT/Win 1.1 $50
Doom II $30; Floorplan+3D/Win $10
Battle Chess $5; Lion King Screen Scenes $10
Quickbooks Dlx. CD $50; Dark Forces $30
Win Fax 4.0 $40; Mickey's ABC's $15
DacEasy Accounting/Win 2.0 $40
PC Anywhere 2.0/Win $80
Tie Fighter $25; Civilization CD $10
Microsoft Golf $20; Corel Flow $30
Dos 5.0 $15; Windows 3.0 $20
Bodyworks CD $10; Photoshop 3.05 $450
1000's of other titles, call for availability.
+Shipping & Handling; Qty's limited.
www.SoftwareOutlet.com

Software Clearance Outlet
3501 W. Moore Ave. #C
Santa Ana, CA 92704
(800)230-SOFT • (714)434-6425
FAX (714)434-4799

CIRCLE 462 ON READER SERVICE CARD

UPGRADES/MEMORY

TANDY

UPGRADES

Hard Cards for 1000's

21meg $169 210meg $249
42meg $229 540meg $299

1000 EX & HX Hard Drives

21meg $239 $210meg $349

Upgrade Motherboards

80486DX/4-100 $449
Pentium-100 $789

We sell New and Used Hard Drives, Floppy Drives, Ram Memory, Motherboards, VGA & CGA monitors/Cards, Keyboards, CD-ROM drives, and much more for MOST Tandy models. **Call or write for our FREE catalog.**

DCS Industries
5265 Hebbardsville Rd.
Athens, OH 45701
800-537-3539
US & Canada

Foreign
614-594-4180
FAX
614-592-1527

CIRCLE 493 ON READER SERVICE CARD

BUSINESS DIRECTORY

INVENTORY MANAGEMENT

Full Transaction Supp, Multi Locations, Stock Status, Purchasing, Job/Dept Costing, Trans Hist Analysis, Trend Analysis, QC Reporting, Bill of Materials, MRP, Serial/Lot Tracking, Quote Prep/Track, Order Processing & Invoice.

Applied Micro Business Systems
177-F Riverside Avenue
Newport Beach, CA 92663
(714) 723-0582 • Fax (714) 675-5325

CIRCLE 514 ON READER SERVICE CARD

USED SOFTWARE

- Used IBM Compatible Software
- Most Popular Titles Available
- Save up to 50% on Current Versions
- Huge Savings on Prior Versions
- Includes Original Manuals & Disks
- Guaranteed Complete & Virus Free
- 30 Day Money Back Guarantee
- Amex, Discover, MC & VISA
- Call 7am–4pm PST M–F for Free Price List

Recycled Software, Inc.
PO Box 33999
Las Vegas, NV 89133-3999
800-851-2425 • Fax 702-655-5662

CIRCLE 441 ON READER SERVICE CARD

MEMORY

BATTERIES & FAX/MODEMS

RAM Memory Upgrades for over 3,600 brands and models of PC's, MACs, Workstations, Laser Printers, Mobile Phones, Camcorders. More choices than anybody else on earth. Low Prices.

VISA • MASTERCARD • AMEX • DISCOVER • PO'S

CONTROL *Memory Factory*
800-952-7867 (408) 437-1122
FAX: (408) 437-1278

CIRCLE 418 ON READER SERVICE CARD

Insures Your Computer

The Computerowners℠ insurance policy repairs or replaces hardware, media and purchased software. $49 a year covers up to $2,000 of equipment against **theft, fire, accidents, power surge, natural disasters and more!** $50 deductible. Call for immediate coverage or information

1-800-800-1492/1-800-SAFEWARE
SAFEWARE, The Insurance Agency Inc.
2929 N. High St., PO Box 02211
Columbus, Ohio 43202
Internet: http://www.safeware-ins.com

CIRCLE 421 ON READER SERVICE CARD

Toner Cartridges from $29.70

Oki drum / Epson / NEC specialist
Money Back Guarantee
Toner/Drum/Developer New & Reman.
Corp. Sales & Dealer Programs

Ultimate Image, Inc.
3498 N. San Marcos Pl., Suite #10
Chandler, AZ 85224
(800) 459-9876 / (602) 966-8973
fax (602) 829-6706
http://www.getnet.com/ultimate/

CIRCLE 509 ON READER SERVICE CARD

School Partner

New accounting, new features–and **still** costs a fraction of lesser systems, yet does much more!

- Teacher-student scheduling.
- Classes, rosters, attendance tracking.
- Billing & receivables.
- General Ledger, Payables, Payroll & more!
- For IBM compatibles, networks

This is what you need to manage your school!

Summit Systems Inc.
16 Berry Hill Road, Suite 121
Columbia, SC 29210 USA
803/798-9749 • 800/228-5857
Fax: 803/731-0349
http://www.intraweb.com/summit.htm

RECREATION

SCORE 100+ BASE/SOFTBALL STATS INSTANTLY

- Score games in the field!
- Easy menu structure!
- 1/4 cost of laptop systems!
- Standardize your stats!
- Playing field/box score display on screen!
- Track stat tendencies!
- Scores most leagues!
- Full computer capabilities w/built-in spreadsheet!
- Upload stats to PC/Mac!

1-800-599-7828

ProCreations, Lake Stevens WA
(206) 335-4470

http://www.imall.com/stores/procreations/

CIRCLE 494 ON READER SERVICE CARD

RECREATION

ULTIMATE MODEM

Call from home or office!

•The Ultimate BBS•

FREE

- Lively Network Chat
- 100,000 Shareware & GIF's, Windows, Mac and DOS files
- Free Internet Accounts
- UNLIMITED ACCESS
- Unlimited Downloads
- Up to 28.8k on all 160 Lines
- New GIF's posted daily by our photographers

1-217-792-3663

Customer Support Voice Line 415-281-4429

CIRCLE 445 ON READER SERVICE CARD

world wide bbs

- GET EXOTIC IMAGES, SHAREWARE, & WINDOWS/DOS FILES -UPDATED DAILY!
- FREE UNLIMITED DOWNLOADS!
- NO SUBSCRIPTION REQUIRED!
- AND NOW...LIVE VIDEO GIRLS!

USE YOUR MODEM TO DIAL

011-373-837-1238

MCI CALLERS: DIAL 10288 FIRST, THEN #.

INTERNATIONAL LONG DISTANCE RATES APPLY.
NOT RECOMMENDED FOR MINORS

THE ULTIMATE ENTERTAINMENT BBS

011-852-172-97-980

- OVER 10 GB OF EXOTIC GIFS INCLUDING AN EXTENSIVE SELECTION FROM THE FAR EAST (ALL IN AMAZING HIGH QUALITY!)
- SIZZLING LIVE CHAT
- E-MAIL AND DISCUSSION FORUMS
- PLUS GAMES GALORE
- AND IT'S ALL FREE!

CALL FUNZONE NOW FOR AN EXPERIENCE YOU'LL NEVER FORGET!

FUNZONE

The Ultimate Entertainment BBS.

Not recommended for minors.
International calling rates apply.
No credit cards required.

CIRCLE 452 ON READER SERVICE CARD

RECREATION

UNCENSORED ASIAN BEAUTIES

Over 10 GB of high quality adult GIFs.

Loads of original content.

UNCENSORED world-wide live chat.

!! All Free !!

So call Now:

011-852-172-94-949

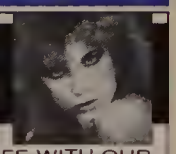
EroticaEast

THE UNCENSORED BBS

No credit cards required
Not recommended for minors.
Standard long distance charges apply.

CIRCLE 429 ON READER SERVICE CARD

FANTASY SOFTWARE



RELIEVE THE STRESS OF DAILY LIFE WITH OUR

FANTASY DISKS

FANTASY VGA MOVIES – Over 1 MB – TALK thru your speaker or SoundBlaster. 1 Movie $29 · 3 Movies $65 · 5 Movies $94

FANTASY VGA GAME – Over 5 MB with SOUND - 80 Romantic Scenes – 2-8 Players $79 or $69 w/ purchase of any FANTASY MOVIE above

FANTASY PICTURE CD-ROM – 1000+ VGA pictures, with interactive database - search by YOUR grade, category, description, or date viewed.

FANTASY INTERACTIVE MOVIE CD-ROM – 1full length movie spoof of Plan 9 from Outer Space with scenes from the original - create unlimited GIFS from movie.

FANTASY GAME CD-ROM – 2 CD-ROM set containing 1200 MB of movies plus 4 challenging multi-level arcade games.

FREE VHS VIDEO TAPE (1-2 hr) with each CD-ROM: $59 each or all 3 for $149.

Orders Only: 800-243-1515 Ext. 600 BV

24 HRS/7 DAYS • In PA Add Tax
3.5" or Foreign Orders Add $2 per disk
CK/MO to: S Software P.O. Box 220
Dept. 600BV, Hatfield, PA 19440 / ADD $3 S/H

$1.50 SHAREWARE SPECTACULAR
FREE CATALOG - 600+ PROGRAMS

CIRCLE 405 ON READER SERVICE CARD

RECREATION

BBS HOT LIST

Online's Best!

The House of LUST

24 Hours Live Women Online Uncensored Chat
File Libraries • 8 N 1 Up to 28.8
Credit Cards Online **954-725-0705**

THE PLEASURE ZONE Online

24 Hour Free International BBS
Uncensored Chat • Huge File Libraries • 8 N 1
Int'l. Rates Apply **011-852-1729-0912**

ASIAN HEAT

24 Hour Free Uncensored BBS
Hot Live Chat • Huge File Libraries • 8 N 1
Int'l. Rates Apply **011-852-1729-0914**

RECREATION

Club Orient

Explore The Uncensored World Of International Online!

FREE! Immediate Access

- Thousands of High Quality Gif's & JPEG's to Download.
- Hot Personal Chat Private or Group...Totally Uncensored!

No Waiting, No Charges & No Credit Cards Needed. Just Dial in with your Modem for a WILD Time!

011-852-1729-0913

Not Recommended for minors. International Rates Apply.

Virtual Ecstasy

LIVE VIDEO ONLINE!

GIRLS That You Can SEE, HEAR And SPEAK To.

TOTALLY INTERACTIVE

One to One, Two to One. Journey Room to Room

FREE iView Software

http://www.virtualecstasy.com

Via Modem: 1-954-984-1001

Not recommended for minors

LIVE • LIVE • LIVE

CLUBLOVE
ADULT PLAYGROUND

CHECK IT OUT!

http://www.adultplayground.com/pcw

Hot Live Chat & More...

The House of LUST

Huge File Libraries High Quality Gif's & JEPG's

954-725-0705

Not recommended for minors.
Call from home or office via Modem 8-N-1
Up to 28,8 Bps

24 Hours a Day

Bar Code Headquarters

Labeling Software
For Dot Matrix or LaserJet

For Windows and DOS!

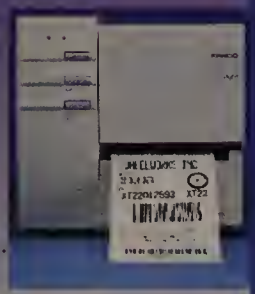
- Any Format, Any Label. WYSIWYG, Text Design
- **Formats for Sears, K-Mart, Penney's, WalMart, TCIF, Logmars, AIAG, etc.**
- UCC-128, UPC/EAN, 2 of 5, Codabar, & Code 39
- Big Text and PCX. Powerful, Versatile, Easy!
- Imports ASCII data files from dBase, etc.
- LabelRIGHT™ for **Windows™ – $295**
- LabelRIGHT™ for **DOS–$279**

Bar Codes for Windows™
- Insert bar codes into any font based Windows program via "Hot Key"
- UPC/EAN, UCC-128,128, 2of5, Codabar, Code 39
- Fonts, Bitmaps and Metafiles, Complete – **$199**

Radio Frequency Terminal
- For IBM or Macintosh Computers

- 150 to 600 foot Range
- 16 Selectable Frequencies
- No License Required
- 2 way RS-232 Communication
- Kybrd, Wand, Laser or CCD
- 1-16 Terminals/Base Station
- 6.3" x 3.3" x 1.25", 12 oz.
- Base Station – **$795**
- Complete Terminal – **$1095**

Thermal Transfer Printers
- 2 per second Thermal Transfer - Up to 4"wide
- Supports all Popular Bar Codes; 1 year Warranty
- Prints Bar Codes, Big Text, and PCX Graphics
- Small size, Weighs 20 lbs.
- Complete with labels, ribbon, cable, LabelRIGHT DOS software, and Datamax Allegro Printer – **$1495**



Portable Bar Code Readers
for PC, Mac and Serial

With Voice!

- Battery Operated Reader – 64K or 256K
- Attaches as 2nd Keyboard or Serial
- Display messages & voice messages prompt operator.
- Pick lists, tables.
- Wand, CCD or Laser Scanner
- UPC/EAN, 128, 2of5, MSI, Code 39, etc.
- Date/time stamps
- Built-in Inventory Programs -No Programming Necessary
- **Very Easy to Create Custom Prompts**
- Small Size-Weighs Only 12.5 oz.
- 64K Unit Complete with Wand & Voice – **$799**
- 256K Unit Complete with Wand & Voice– **$899**

Bar Code Readers
for PC, XT, AT, PS/2, Mac and RS-232 Terminals

- Attaches as 2nd Keyboard
- UPC/EAN, Code 128, 2of5, MSI, Code 39, etc.
- Wand, Magstripe, CCD, Slot Badge or Laser
- All European Keyboards Supported
- Superior Read Rates. Made in USA.
- **Top Rated by Independent Reviews**
- Complete Wand only Reader – **$329**
- Complete Cordless Wand Scanner – **$595**
- Complete with Laser Scanner – **$655**

Low Cost Laser Reader
- Integrated Laser Handheld Wedge Reader with Decoder in Handle for PC or Mac
- Outstanding Price, complete only – **$655**

Ordering is Easy! 800-345-4220

Europe Phone: (353) 1 6614 566 • Europe Fax: (353) 1 6614 622 USA Phone: 408-458-9938 • USA Fax: 408-458-9964

- Same Day Shipping
- 30 Day Money Back Guarantee
- Direct from Manufacturer
- Free "800" Support
- Free UPS Blue in USA

In Europe call our Ireland Office:
353 1 6614 566 (Fax: 353 1 6614 622)

WORTHINGTON DATA SOLUTIONS

Call for our Free Catalog

Keys To Success

Earn your B.S. or M.S. degree in Computer Science—without leaving home and without spending thousands of dollars.

- All Courses Home Study
- Approved for tuition reimbursement by leading corporations
- C++, Using Windows, and Ada courses available
- Career*Path* training in computer programming available

For free information call **1-800-767-AICS**

AMERICAN INSTITUTE FOR COMPUTER SCIENCES

ACCREDITED MEMBER
World Association of Universities and Colleges

GET MORE

PC WORLD online

MORE PLACES
MORE READERS
MORE SOFTWARE
MORE TIPS
MORE REVIEWS
MORE INTERACTIVITY
MORE ANSWERS

PC WORLD ONLINE DELIVERS!

Web: http://www.pcworld.com
America Online: keyword pcworld
Prodigy: jump pcworld
CompuServe: go pcworld
MSN: go pcworld

ARLINGTON COMPUTER PRODUCTS...GREAT SERVICE SINCE 1984!

■ **PC Magazine**
"...Arlington offers worry-free mail order purchasing!"

■ **PC Computing – 1994**
"A 10-year track record of consistent service!"

■ **PC Computing**
"...Courteous service and terrific technical support!"

■ **PC World (3/95)**
"...Consistently the lowest prices!"

TOSHIBA The world's best-selling portable computers.

Toshiba Authorized Dealer!

Tecra 700 CS & CT....*BEST PRICE!*
The power of a 120MHz Pentium® chip, the speed of a PCI bus, the performance of synchronous memory and the brilliance of an 11.3" display...
...it's here!
- large 1.2GB drive
- optional Desk Station V
- Lithium Ion battery
- optional 4X CD-ROM
- SoundBlaster Pro

Tecra 720 CDT .....*BEST PRICE!*
- 133MHz • 6X CD-ROM

Portege 610CT - A 90MHz ultraportable $3859
- 9.5" active
- Sound Blaster Pro
- 720MB drive • 8MB EDO

Toshiba has packed plenty of power into the Satellite Series.

Satellite 100CS

- Fast Intel 75MHz Pentium® chip
- 10.4" color dual-scan
- SVGA, VL bus graphics accel.
- 8MB RAM expandable to 40MB
- 504MB hard disk drive

Satellite 100CS $1919

Pentium Powered CD-ROM color notebooks: the new Satellite Pro 410 series.
- Quad-speed CD-ROM (optional on 410CS)
- Powerful Pentium® 90MHz processor
- 8MB EDO RAM
- 11.3" color dual-scan or color TFT active matrix display
- 24-bit true color support (410CS: CRT only; 410CDT: LCD or CRT)
- Advanced graphics accelerator
- 810MB hard disk drive
- Integrated sound
- Lithium Ion battery

Satellite Pro 410CS.....$3099
Satellite Pro 410CDT $4299

Satellite Pro 400CS $2599
Satellite Pro 400CDT.....$3859
•75MHz Pentium® •810MB drive
•Quad CD std. on CT/option on CS

Targus Universal Case.....$6
Targus Leather Case.....$9
Targus Notepac $3

PRICE & PERFORMANCE

MultiModem 2834LTE $179
- 28.8 V.34 PCMCIA modem
- serial accelerator
- Cool Jack

MultiTech® Systems

MultiTech is one of the world's leading modem makers. But what you may not know is that MultiTech offers much more than data/fax modems. They also are one of the leading manufacturers of statistical multiplexers and have introduced muxes that can handle data, fax and voice traffic. In addition, MultiTech makes central site rack-mount modems.

MultiModem MT2834ZPX....$159
- internal V.34 data fax modem
- **serial accelerator card** with 2,000 character buffer compared to one character buffer on standard modems
- 10-year warranty

MultiModem MT2834ZDX....$169
- external V.34 fax modem
- adaptive line probing
- EIA extended auto mode
- 10-year warranty

MultiModem MT2834ZDX-C..$219
- V.34 fax modem
- **simultaneous voice**

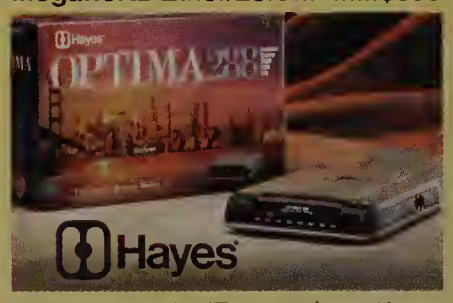
FOR ORDERS & QUOTES
800-548-5105

No surcharge for charge cards! Prices and availability subject to change without notice. Qualified purchase orders accepted.

Texas Instruments
Extensa 450/450T ....$1449/$1899
Extensa 560CD/CDT..$2689/$3649
Extensa 565 .....$3179
TM5100/5200 .....$3359/$4599

SCANNERS/DIGITIZERS
Microtek E3 **or** E6.....$369/$559
Microtek ScanMaker III.....$1949
Relisys Scorpio/Taurus..$409/$679
Summasketch 12 x 12.....$249
UMAX S6 **or** LE .....$499/$549
UMAX S6E/S12 Pro ....*CALL*/$819

MODEMS
Megahertz 28.8 .....$259
Megahertz Ether/Modem.....$299
Megahertz Ether/28.8.....$399



Accura 28.8 Int/Ext.....$159/$179
PCMCIA 14.4/28.8 Fax.$149/$215
NEW...WITH VOICE!!!
Optima 28.8 Int/Ext.....$299/$359

U.S. Robotics
Sportster 28.8 Int/Ext....$169/$179
Sportster Vi 28.8 Int/Ext..$179/$189
Courier V.34 Int/Ext .....$329/$359

Hewlett Packard
Laserjet IV+/IVM+ ...$1399/$1949
Laserjet 5P / VMP .....$859/$1039
Laserjet VL/OfficeJet....$519/$489
Laserjet IV V/MV.....$1989/$2799
Laser 5SI **or** MX.....$2819/$3899
2MB/4MB/8MB upgr...$89/$99/$179
DeskJet 600/660C.....$199/$349
DeskJet 850C/1600....$509/$1399
4P/4C Scanner.....$329/$929

Canon
Canon BJC-610 ..*PRICE DROP-CAL*
Canon BJC-4100.....$29
BJC-30 **or** BJC-70.....$259/$33
BJC-210/230.....$199/$37
Notejet III 75/540 .....$259
Innova 350 CD-100MHz & CD .$269

OKIDATA
600e.....$399 ML520 .....$37
610e .....$479 ML521 .....$49
OL810E... $749 ML590 .....$42
OL1200 ...$1059 ML591 .....$58
ML320 .....$309 ML395 .....$97
ML321 .....$429 ML3410..$124

NETWORKING
Netware 3.12 5/10-user $619/122
Net 3.12 25/50-user..$1799/$2399
Net 3.12 100/250-user$3399/4999
Net 4.1 5/10-user.....$599/$129
NetWare 4.1 25-user $197
Net 4.1 50/100-user .$2249/$3399
Lantastic Starter 6.0 .....$219
Lantas 6.0 5/10-user ....$319/$56
3 Com EtherLink III.....$9
3 Com Ether 5/20-pack .$399/$141
Intel Pro TP 5/20-pack..$349/$1249
Intel Pro Flash 5/20-pack.$399/141
Intel Pro Combo/5-pack.$99/$40

CHIPS
1MB/4MB Simms .....$39/$9
8MB/16MB Simms.....$179/$29

intel OVER DRIVE

DX2-50 **or** 66.....$109/$129
DX4-75 MHz.....$135
DX4-100MHz $16
Pentium® chip 63MHz.....$139
Pentium® chip 83MHz.....$189
Pentium® chip 120/125/135MHz..$329

☑ YES! BILL ME LATER

Rush me one year (12 monthly issues) of PC WORLD for only $21.97. That's almost 63% off the annual cover price of $59.40. Plus I'll also receive a FREE CD-ROM loaded with over 100 shareware programs-just for trying PC WORLD.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Mail this card • Call 800-825-7595X501 • or Fax 415-882-0936

Please allow 6-8 weeks for delivery of your first issue. Foreign orders please add $46 postage. Canadian orders add $20. postage plus 7% GST (#R124669680).

YOUR FREE GIFT!

The PC WORLD Shareware CD-ROM-loaded with valuable shareware programs.

PC WORLD

4MJG2

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Subscription Department
P.O. Box 51833
Boulder, Colorado 80323-1833

MAG INNOVISION™

The **DX15T** and **DX17T** feature advanced Trinitron CRTs for brilliant colors and vibrant images. Advanced Trinitron CRTs on both models renders a vertically flat display surface to reduce distortion and enhance image quality corner to corner. Features include ultra high resolutions up to 1280 x 1024 non-interlaced. A superfine .25mm pitch ensures extremely sharp focus and definition that traditional CRTs cannot match.

DX15T...$399 **DX17T**.....$709

MXP17F - 1600 x 1280.....$789
DX1495/1595.....$259/$359
DX1795.....$629

GREAT VALUE

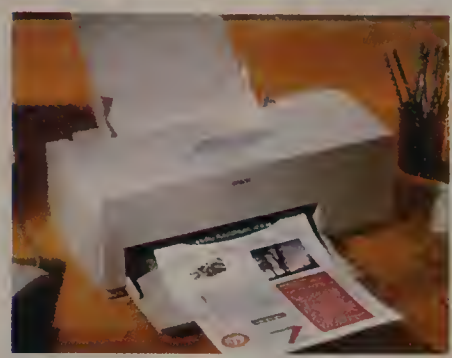
MX21F.....$1439
- 1600 x 1280 non-interlaced
- .28mm dot pitch
- auto-synch 50-120Hz vertical
- auto-synch 30-82KHz vertical

EPSON®

New lower prices!!!

Stylus COLOR II

The most vivid 720dpi color and black & white printing of any office printer in its class $269*



Stylus IIS, II and Pro include ***Look Your Best Color Pak***, a $249 value.

Stylus Color IIS
- 360 dpi color resolution **$179***

**after rebate*

Stylus Pro - photo-quality color at a new lower price!!!
- 720 x 720 dpi with Microdot technology .....*BEST PRICE*

Stylus Color XL .....*CALL*

Thousands of printers in stock!

LX300/LQ570+.....$169/$249
FX870/1170.....$279/$369
LQ870/LQ1070+ .....$429/$379
LQ1170/2550.....$679/$959
FX2170/LQ2170.....*CALL/CALL*
DFX5000+/8000....$1389/$2299
Stylus 1000.....$459
Action Laser 1100/1400..$369/$469

Photo PC Digital Camera

Just point, shoot and plug into your computer's serial port. It's that easy to get pictures into your computer. No more film processing. No more scanning.
- 640x480 in 16 million colors

.....***GREAT PRICE!***

Epson scanners!!!

Action Scanning II $419
ES-1000C $689
- 30-bit color • 1600 dpi

ES-1200 Professional.....$1059
- 30-bit color • 2400 dpi

MONITORS

PRINCETON GRAPHIC SYSTEMS

O 14 **or** 15.....$249/$339
tra 17 **or** 17+ .....$559/$609
tra 20 - 1600 x 1280.....$1069

NANAO

2 17/17EX.....$849/$999
2-17/T2-17TS.....$1069/$1039
2-21 .....$1799
X2-21/T20 ESP .....$2869/$1819

NOKIA

9E .....$439 447L.....$669
7X.....$919 445X.....$1859

SONY

FII .....$475 17SFII.....$859
5SX1.....$419 20SFII.....$1749
7SEIIT.$1049 20TC.....$3139

ViewSonic®

GS/15GA.....$409/$479
GS/17GA .....$649/$739
7EA - multimedia.....$649
T770/PT810.....$939/$1879
PS/20G.....$829/$1199
PS - 1600 x 1280.....$1599

DRIVES & TAPES

orado Jumbo/Trakker 700..$159/$319
orado T-1000/1000E.....$169/$199
orado Sure Store - writer $989
roSolutions Back Quad CD...$329
C 6Xi/6Xe .....$329/$469
agate 1.2GB/1.6GB..$229/$299
agate 2GB.....$325
und Blaster CD 6X.....$209
st Digit 1GB/1.6GB..$229/$279
st Digit 2GB/2.5GB..$429/$489
4 / Dual Floppy.....$39/$89

APC
280/400/450.....$99/$149/$169
600/900/1200...$239/$329/$289
o 420/650 PNP .....$219/$269
art 450/700.....$269/$339
art 1000/1400.....$449/$559
art 2200.....$999

STB

STB Systems, Inc.®

PowerGraph 64 Video

A 64-bit graphics accelerator delivering full-screen video playback
- Play multimedia video clips full-screen with full-motion
- Up to 16.7 million colors for photo-realistic images

1MB/2MB EDO DRAM..$159/$209

PowerGraph 64 - 64-bit
1MB 100Hz refresh rate.....**$129**
2MB 75Hz refresh rate.....**$179**

Velocity 64 Video
2MB EDO VRAM $269
4MB EDO VRAM $409

Panasonic®

PanaSync/Pro P15.....$419
- 1280 x 1024 ni
- MPRII
- .27mm dot pitch

PanaSync S17.....$689
- 1280 x 1024 ni
- MPRII
- .27mm dot pitch
- 3-year limited warranty and 1-year on-site replacement

COMPUTER RESELLER NEWS EDITOR'S CHOICE

PanaSync/Pro C2192P.....$1669
- 21" flat square
- 1600 x 1280 ni
- .25mm dot pitch
- Agras coating
- DQ-DAF gun
- 3-year limited warranty and 1-year on-site replacement

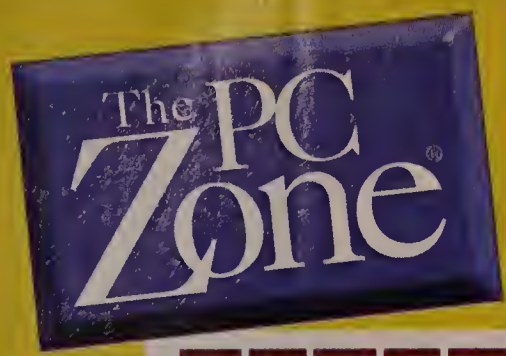
Arlington Computer Products, inc.

851 Commerce Court
Buffalo Grove, IL 60089

HOURS (CENTRAL TIME)
7:30am-8:30pm/Mon thru Fri 9-5/Sat
SHIPPING 847-541-6595
FAX 847-541-6881
TECHNICAL ASSISTANCE 847-541-6583
ILLINOIS - CORPORATE SALES 847-541-6694
CUSTOMER SERVICE AND IN ILLINOIS 847-541-6333

FOR ORDERS & QUOTES
800-548-5105

Circle 8 on reader service card



Call The PC Zone
For The Lowest Prices...

- ✔ Brand names. Discount prices!
- ✔ Over 20,000 products
- ✔ Great customer service

Check out our expanded line of Notebooks and Desktops and call us for all your *SOFTWARE* needs, too!

IBM ▪ NOVELL ▪ Acer ▪ The PC Zone 1-800-258-8088 ▪ SONY ▪ Packard Bell ▪ Canon

digital™

ONLY $4520
Order #26893

Hi-Note Ultra II
High-performance business partner!

- 133MHz Intel Pentium® processor
- 8MB RAM standard

Processor	Hard Drive	Screen	Order #	Price
P133	1.4GB	10.4" SVGA TFT	#26893	$4520
Or LEASE monthly for as low as >>>>>> $181*				
Options & Accessories			**Order #**	**Price**
PNY 8MB Upgrade			#28394	$396.98

TOSHIBA

Product shown is representational only

NEW!

ONLY $7298
Order #32183

Tecra 720 Series
Packed with power and speed!

- 133MHz Intel Pentium® processor
- 16MB RAM standard
- 6X CD-ROM drive
- Built in 28.8 data/fax modem, full duplex telephony

Processor	Hard Drive	Screen	Order #	Price
P133	1.2GB	12.1" SVGA TFT	#32183	$7298
Or LEASE monthly for as low as >>>>>> $292*				
Options & Accessories			**Order #**	**Price**
PNY 8MB Upgrade			#28341	$467.98
Deskstation 5			#28684	$749.98

Texas Instruments®

Product shown is representational only

ONLY $5368
Order #32184

TravelMate 5300
Featuring PCI bus architecture!

- Intel 133MHz Pentium® processor
- 8MB RAM standard
- Lithium ion battery packs

Processor	Hard Drive	Screen	Order #	Price
P133	1.2GB	11.3" SVGA TFT	#32184	$5368
Or LEASE monthly for as low as >>>>>> $215*				
Options & Accessories			**Order #**	**Price**
PNY 8MB Upgrade			#33079	$339.98

IBM Business Partner — Authorized Personal Computer Dealer

intel inside pentium PROCESSOR

AS LOW AS $4999

IBM ThinkPad 760
CD-ROM versions shown

Pentium® processor-powered portables from IBM!

- Up to 120MHz Intel Pentium® processor
- 8MB RAM standard, upgradable to 40MB
- Up to 12.1" Active Matrix screen
- 28.8 data/fax modem included

Processor	Hard Drive	Screen	Order #	Price
P90	720MB	10.4" TFT	#27902	$4999
Or LEASE monthly for as low as >>>>>> $200*				
P90	720MB	12.1" SVGA TFT	#27901	$5499
P120	720MB	12.1" SVGA TFT	#27903	$5699
P90	1.2GB	12.1" SVGA TFT	#27900▲	$6699
▲Includes 4X CD-ROM				
Options & Accessories			**Order #**	**Price**
ThinkPad Li-Ion Battery Pack II			#27904	$265.00
8MB Upgrade			#28347	$369.98

NEW!

ONLY $1968
Order #30717

Satellite 100CS
Pentium® processor-powered notebook for under $2000!

- 75MHz Intel Pentium® processor
- 8MB RAM
- Brilliant 10.4" color display
- NiMH battery pack and integrated AC adapter
- Select Windows 95 or Windows 3.11 at startup
- One-year warranty and 24-hour technical support

Processor	Hard Drive	Screen	Order #	Price
P75	504MB	10.4" DSCAN	#30717	$1968
Or LEASE monthly for as low as >>>>>>> $79*				
Options & Accessories			**Order #**	**Price**
PNY 8MB Upgrade			#28276	$379.98

HEWLETT PACKARD Authorized Reseller

ONLY $399.00
Order #86326

NEW!

HP DeskJet 820Cse
Professional Series color inkjet printer

Big printing performance for the small office!

- 7 ppm B&W; 3 ppm color
- 50 TrueType fonts included
- 150-sheet paper tray

Order #	Description	Price
#27969	HP DeskJet 340	$289.98
Order #	**Description**	**Price**
#13695	HP High Capacity Black Ink	$26.98
#27142	DeskJet High Capacity Black Ink - 2 Refills	$14.98
#27143	DeskJet Black Ink - 2 Refills	$9.98
#27146	DeskJet Color - 4 Tri-Color Refills	$22.98

Prices may drop quickly.

CALL FOR CURRENT PRICES!

All stocked items shipped same day.

Credit cards are not charged until the order is shipped. Most products ship the same day for overnight delivery. Packages shipped overnight at $7 for the first 7 pounds and $1 for each additional pound or via UPS ground. Call for international shipping rates. Packaging and handling $4 per order. Returns subject to a restocking fee. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors.
*Dana Commercial Credit Corp. Business Lease: 36 month, full-payout lease with a $1 purchase option based on approved credit. Other leasing options available. Call for full details.

Call Our Knowledgeable Sales Advisors!

© 1996 Copyright Multiple Zones International Inc. All rights reserved. Windows is a registered trademark of Microsoft Corp. Unauthorized duplication is a violation of applicable laws. Intel, Intel Inside and Pentium™ are registered trademarks of the Intel Corporation.

Your Computer Discount Catalog SuperStore™

If you don't see what you're looking for – *CALL!*

Visit us Online: CompuServe...GO MZ, Internet...http://www.internetMCI.com/marketplace/mzone

AS LOW AS $2013

IBM PC 300 Series

High performance and upgradability for your growing business!

- Up to 166MHz Intel Pentium® processor
- 16MB RAM standard
- Accelerated Local Bus video
- ISA/PCI Expansion Bus

Chassis	CPU	Hard Drive	Order #	Price
Desktop 350	P100	850MB	#27917	$2013
Or LEASE monthly for as low as >>>>>>> $81*				
Desktop 350	P100	850MB	#27916▲	$2185
Desktop 350	P133	1.2GB	#27945	$2499
Desktop 350	P166	1.2GB	#30694	$3019
Desktop 350	P166	1.2GB	#30696▲	$3189

▲Includes 4X CD-ROM Drive

ONLY $479.98 Order #26201

Hewlett-Packard LaserJet 5L

An excellent laser printer for small offices

- 600x600 dpi with Resolution Enhancement Technology
- 4 ppm print speed

Order #	Description	Price
#23786	LaserJet 5MP Laser Printer	$1049.00

AS LOW AS $2669

CTX EzBook Series

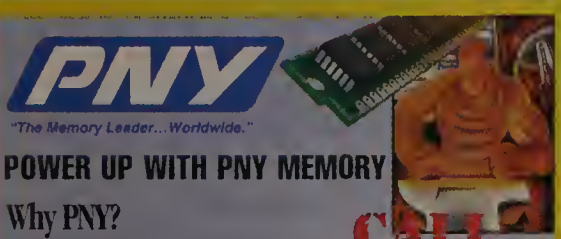
Performance, quality and value combined!

- Up to 90MHz Pentium® processor
- 8MB RAM standard
- Includes Windows 95 preloaded

Processor	Hard Drive	Screen	Order #	Price
P75	540MB	10.4" TFT	#32121†	$2669
Or LEASE monthly for as low as >>>>>> $107*				
P75	810MB	10.4" TFT	#32122†•	$2999
P90	540MB	10.4" TFT	#32123†	$2789
P90	810MB	10.4" TFT	#32124†	$2889
P90	810MB	10.4" TFT	#32125†•	$3199

†Includes 2X CD-ROM • 16MB RAM

Options & Accessories	Order #	Price
EzBook NiMH Battery Pack	#32131	$99.98
EzBook External Battery Charger	#32132	$49.98



POWER UP WITH PNY MEMORY

Why PNY?

- Compatibility – The largest variety of laptop memory with GUARANTEED COMPATIBILITY!
- Toll-free tech support and fax back service 800-234-4597*
- Lifetime warranty on all products
- ISO9001 Quality registered ant netware approved

CALL FOR CURRENT PRICES!

Is your system running slow? Does it take hours to open applications? You don't need a new computer, you just need more memory... the fastest way to open Windows 95!

* Visit our home page at http://www.pny.com!

Compaq Concerto 4/25, 4/33		
#28212	4MB	$199.98
#28213	8MB	$359.98
#28214	16MB	$559.98
IBM ThinkPad 701c, cs "Butterfly"		
#23166	4MB	$199.98
#23167	8MB	$319.98
#23168	16MB	$532.98
NEC Versa 2000D		
#28318	4MB	$167.98
#28319	8MB	$349.98
#28320	16MB	$627.98
Toshiba Tecra 700 Series		
#28341	8MB	$460.98
#28342	16MB	$907.98
Digital NiNote		
#28391	8MB Kit	$329.98
#28392	16MB Kit	$559.98

Can't find what you need? PNY has a comprehensive line of memory. Call for additional product information and personalized assistance!

ONLY $459.98 Order #29929

MAG Innovision DX15T 15" Trinitron Color Monitor

Super fine pitch and resolution!

- .26 mm stripe pitch Trinitron®
- 1280x1024 resolution
- 14" viewable area
- Plug and play technology supports Windows 95

SERVICE RELIABILITY READERS' CHOICE

ONLY $769.98 Order #29930

MAG Innovision DX17T 17" Trinitron

Super fine pitch & size for your graphics projects!

- .26mm stripe pitch Trinitron®
- 1280x1024 resolution
- 16.1" viewable area
- Plug and play technology supports Windows 95

AS LOW AS $5499

Canon Notejet IIICX

Pentium® processor power, plus built-in color printing!

- Up to 120MHz Intel Pentium® processor
- 8MB RAM standard
- Built-in color BubbleJet printer and scanner
- Large 11.8" Active Matrix color screen

Processor	Hard Drive	Screen	Order #	Price
P90	810MB	11.8" Active	#31810	$5499
Or LEASE monthly for as low as >>>>>> $220*				
P120	1.2GB	11.8" Active	#31811	$6599

The PC Zone 1-800-258-8088 NEC Microsoft Lotus TOSHIBA AST COMPUTER HEWLETT PACKARD Authorized Reseller TEXAS INSTRUMENTS

Visit us Online: CompuServe...GO MZ, Internet...http://www.internetMCI.com/marketplace/mzone

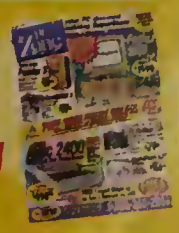
NO SURCHARGE ON CREDIT CARDS

1•800•258•8088

Corporate, Education and Government bids welcome! Fax to 1-800-417-1993

YOUR SOURCE CODE PW606

Call for your FREE Catalog



Circle 161 on reader service card

WHY PAY RETAIL? CDW® SELLS FOR LESS!™

COMPUTER DISCOUNT WAREHOUSE™

NEC MultiSync M500 and M700

new!

15" and 17" color monitors

Superior multimedia display performance

◆ M500: 15" (13.8" viewable image size) ◆ M700: 17" (15.6" viewable image size) ◆ 1280 x 1024 maximum resolution ◆ 75Hz at 1024 x 768 maximum refresh rate ◆ .25mm dot pitch ◆ Integrated 2-watt stereo speakers and microphone ◆ Plug and Play compatible ◆ MPR-II, Energy Star and NUTEK compliant ◆ 3-year limited warranty

M500 ..... $569.01 CDW 66451
M700 ..... $851.57 CDW 66452

new!

Simple Technology Incorporated 28.8 Communicator with SimpleJack

◆ Direct-connect in-line RJ-11 phone connector ◆ 28,800 bps (V.34 and V.FC) data ◆ 14,400 bps fax ◆ Cellular ready (with optional connector cord) ◆ MNP10-EC ◆ TX-CEL ◆ Voice recording (with integrated sound) ◆ Includes communications software ◆ Windows® 95 approved ◆ PCMCIA Type II

$261.31 CDW 66869

28.8 Communicator $207.57 CDW 56057
14.4 Communicator $95.83 CDW 50919

intel Pentium OverDrive Processors

The ultimate PC upgrade option

Add an Intel Pentium® OverDrive® processor to your Intel Pentium or Intel486™* processor-based system and watch your software fly. With a single chip that's easy to install, you get faster response time, crisper pictures, smoother motion, and life-like images; this means better graphics for your games and spreadsheets that crunch up to 65% faster.**

new!

*Requires 237/238 pin socket.
**SYSmark* application benchmarks run on a 60MHz Pentium processor-based system (16MB RAM, 256K external cache, ATI MACH 64 video card) upgraded with a 120MHz Pentium OverDrive processor).

From:	Pentium 60/66 MHz	Pentium 75MHz	Pentium 90MHz
Upgrade to:	Pentium 120/133MHz	Pentium 125MHz	Pentium 150MHz
	$339.11	$339.11	$414.14
	CDW 65937	CDW 65939	CDW 65940

Adobe PageMaker V6.0 WIN 545.78
Adobe PegeMaker V6.0 WIN upg 132.81
Adobe Photoshop V3.0.5 WIN 545.78
Autodesk AutoCAD LT V2.0 WIN 394.43
Autodesk Generic CADD V6.1 DOS 62.36
Broderbund Print Shop Deluxe II 71.74
Broderbund Printshop Dlx V2.0 WIN 48.92
Ceere OmniPege Pro V6.0 WIN 449.29
Ceere OmniPage Pro V6.0 WIN upg 114.20
Cleer AllCleer III 175.54

Microsoft Word for Windows 95
3.5" $418.60 CDW 55607
3.5" upgrade $94.05 CDW 65606

Connectix RAM Doubler for WIN 54.54
Corel Gellery 2 WIN CD 62.22
CorelDRAW V3.0 WIN CD 62.39
CorelDRAW V4.0 to V5.0 WIN upg CD 167.90
CorelDRAW V4.0 WIN CD 94.27
Datastorm Procomm Plus V2.01 DOS 89.01
Detastorm Procomm Plus V3.0 WIN 122.77
Datastorm Procomm Plus V3.0 WIN CD 122.77
DeLorme Street Atlas V3.0 WIN CD 63.10
Delrina WinFAX PRO V4.0 WIN 78.79
Symantec Communications Suite V2.1 WIN 105.87
Fractal Design Debbler V2.0 WIN 42.15
Fractal Design Painter V4.0 WIN 331.95
Fractel Design Peinter V4.0 WIN upg 114.98
IBM PC-DOS V7.0 UPG 47.51
Inset Systems Hijaek Suite V1.0 WIN 83.59
Intuit QuickBooks V4.0 WIN 94.28
Intuit Quicken Deluxe V5.0 WIN CD 57.24
Intuit Quicken V5.3 WIN 42.09
Lotus 1-2-3 V4.0 DOS upg 92.57
Lotus 1-2-3 V5.0 WIN 291.45
Lotus 1-2-3 V5.0 WIN upgrade 92.69
Lotus Approech V3.0 WIN 92.69
Lotus cc:Mail Desktop V2.2 WIN 62.47
Lotus cc:Meil Mobile V2.2 WIN 125.38

MACROMEDIA Director Multimedia Studio V2
3.5" $889.47 CDW 66961
3.5" upgrade $464.11 CDW 66963

Lotus cc:Mail Router V5.1 ..... 62.47
Lotus Organizer V2.1 WIN 89.25
Lotus Organizer V2.1 WIN vers upg 49.46
Lotus ScreenCam V2.0 WIN 89.23
Lotus SmertSuite R4.0 WIN upg 145.95
Lotus SmertSuite V4.0 WIN 3.5 ..... 374.81
Lotus SmartSuite V4.0 WIN CD 377.34
Lotus SmartSuite V4.0 WIN upg 138.72
Lotus Word Pro 96 WIN 61.78
Lotus Word Pro 96 WIN95 ..... 65.35
McAfee VirusScan V2.2 WIN 44.17
Microcom Carbon Copy V6.1 DOS 116.42
Microhelp Uninstaller V3.0 WIN 34.15
Microsoft Access V2.0 WIN 296.94
Microsoft Access V2.0 WIN dev kit 296.94
Microsoft Access V2.0 WIN upg 114.98
Microsoft Automap V4.0 WIN CD 38.12
Microsoft Encarta Encyclopedia 1996 WIN CD 44.94
Microsoft Excel V5.0 WIN 296.94
Microsoft Excel V5.0 WIN comp upg 114.98
Microsoft FoxPro PRO V3.0 WIN upg 259.08
Microsoft FoxPro PRO V3.0 WIN upg CD 265.72
Microsoft MS-DOS V6.22 upg 49.05
Microsoft Office Pro V4.3 WIN 538.24
Microsoft Office Pro V4.3 WIN 538.24
MS Oftice Pro V4.3 WIN CD w/Bookshelf 538.24
Microsoft Office Pro V4.3 WIN license 458.68

Microsoft Office Pro V4.3 WIN upg 354.25
Microsoft Office V4.2 WIN 449.03
Microsoft Oftice V4.2 WIN CD 449.03
Microsoft Office V4.2 WIN license 382.05
Microsoft Office V4.2 WIN upg 265.72
Microsoft PowerPoint V4.0 WIN 297.16
Microsoft PowerPoint V4.0 WIN upg 112.68
Microsoft Project V4.0 WIN 416.51
Microsoft Project V4.0 WIN vers upg 129.82
Microsoft Publisher V2.0 WIN 69.29
Microsoft Visuel Basic Pro V4.0 WIN CD 443.49
MS Visuel Basic Pro V4.0 WIN comp upg CD 219.18
MS Visuel Basic Pro V4.0 WIN vers upg CD 86.33
Microsoft Visual Basic Std V4.0 CD 86.38
Microsoft Visual C++ V1.52 WIN 89.14
Microsoft Visual FoxPro Pro V3.0 WIN CD 442.63
Microsoft Visual FoxPro Std V3.0 WIN upg CD 89.96
Microsoft Windows V3.11 ..... 92.06
Microsoft Windows V3.11 license 78.51
Microsoft Windows V3.11 upg 49.51
Microsoft Word V6.0 WIN 296.94
Microsoft Word V6.0 WIN upg 114.98
Microsoft Works V3.0 WIN 45.13
NetManege ECCO Pro V3.0 WIN 88.88
Norton Lambert Close-Up V6.0 ..... 115.87
Novell PerfectOftice Pro V3.0 WIN 523.82
Novell PerfectOffice Pro V3.0 WIN upg 281.93
Novell PerfectOffice Std V3.0 WIN 409.64

Lotus SmartSuite 96 for Windows 95
Upgrade, 3.5" $139.27 CDW 61958
Upgrade, CD $138.72 CDW 61957

Novell PerfectOftice Std V3.0 WIN CD 402.26
Novell PerfectOffice Std V3.0 WIN CD upg 202.82
Novell PerfectOftice Std V3.0 WIN vers upg 181.25
Novell Ouattro Pro V5.5 DOS 39.36
Novell Ouattro Pro V6.0 WIN + CD 236.58
Novell Ouettro Pro V6.0 WIN upgrade 46.26
Novell WordPerfect V6.1 DOS 181.25
Novell WordPerfect V6.1 WIN 243.83
Novell WordPerfect V6.1 WIN CD 241.67
Novell WordPerfect V6.1 WIN comp upg 113.92
Novell WordPerfect V6.1 WIN vers upg 89.51
Novell WordPerfect V6.1 WIN vers upg CD 87.70
Peachtree Accounting V3.5 WIN CD + 3.5" 104.84
ProCD Select Phone 1996 WIN/MAC CD 84.28
ProCD Select Street Atlas 1996 WIN CD 84.84
Ouark OuarkXPress V3.32 WIN 574.86
Ouarterdeck DESOVIEW 386 V2.7 ..... 91.43
Ouarterdeck Internet Suite V2.0 WIN 35.20
Ouarterdeck OEMM V8.0 WIN upg 38.09
Ouarterdeck OEMM V8.0 WIN95/WIN3.1 ..... 62.16
Ouarterdeck WebAuthor V2.0/MS Word WIN 43.10
Softkey Calendar Creator Plus V2.0 WIN 37.10
Symentec ACT! Mobile Link V2.0 ..... 236.73
Symantec ACT V2.0 WIN 171.24
Symantec Disklock V3.5 WIN 79.82
Symantec Norton Anti Virus V3.0 DOS/WIN 49.20
Symantec Norton Utilities V8.0 DOS/WIN 112.53
Symantec pcANYWHERE Host V2.0 WIN 61.78
Symantec pcANYWHERE Remote V2.0 WIN 79.44

Microsoft Office Professional for Windows 95
Upgrade, 3.5" $314.50* CDW 63039 $40 rebate
Upgrade, CD w/Bookshelf '95 $314.29* CDW 62863
*After $40 mail-in rebate for qualified upgraders. Offer valid through 12/31/96.

Symantec pcANYWHERE V2.0 WIN 119.21
Symantec pcANYWHERE V5.0 DOS 119.42
Symantec pcANYWHERE V5.0 DOS remote 79.30
Walker Reflections 1 V5.0 WIN 283.28

WINDOWS® 95 SOFTWARE

Arcada Backup for Windows 95 ..... 57.59
Borland Paradox V7.0 WIN95 ..... 268.84
Borland Paradox V7.0 WIN95 CD 268.84
Borland Peradox V7.0 WIN95 upg 89.01
Borland Peradox V7.0 WIN95 upg CD 89.35
Caere OmniForm V2.0 WIN95 ..... 172.24
Claris FileMeker Pro V3.0 WIN95 ..... 179.37
Corel Internet Menie V1.0 WIN95 ..... 19.80
Corel Photopaint Plus V6.0 WIN95 CD 183.83
Corel Print House V1.0 WIN95 CD 26.04
CorelDRAW V3.0 or V4.0 to V6.0 upg WIN95 CD 358.02
CorelDRAW V5.0 to V6.0 WIN95 upg CD 224.18
CorelDRAW V6.0 WIN95 CD 438.37
CorelFLOW V3.0 WIN95 CD 125.90
Cyberjack V7.0 WIN95 ..... 45.41
Delrina WinFAX PRO V7.0 WIN95 ..... 79.97
Symentec Communications Suite WIN95 CD 96.77
Symantec WinFAX PRO V7.0 WIN95 CD 78.62
Inset Sys HiJaak95 V1.0 WIN95 ..... 44.11
Kurzweil VOICE V2.0 w/sound cerd WIN95 ..... 661.26
Kurzweil VOICE V2.0 WIN95 ..... 462.35
Kurzweil VOICE V2.0 WIN95 upg 196.82
Lotus SmartSuite 96 WIN95 ..... 376.78
Lotus SmartSuite 96 WIN95 CD 374.84
Lotus SmartSuite 96 WIN95 upg 139.27
Lotus SmertSuite 96 WIN95 upg CD 138.72
Lotus Word Pro 95 WIN95 CD 93.15
Lotus Word Pro 96 WIN95 ..... 85.35
Microcom Cerbon Copy V3.0 WIN95 ..... 74.29
Microsoft 3D Movie Meker WIN95 ..... 37.50
Microsoft Accees WIN95 ..... 291.12
Microsoft Access WIN95 upg 92.21
Microsoft Bookshelf WIN95 CD 47.30
Microsoft Cinemenie '96 WIN95 CD 29.60
Microsoft Encarte '96 World Atlas WIN95 CD 44.94
Microsoft Excel WIN95 ..... 296.94
Microsoft Excel WIN95 upg 94.05
Microsoft Fury3 WIN95 CD 35.63
Microsoft Money for WIN95 ..... 29.20
Microsoft Money WIN95 CD 29.20
Microsoft Office Pro w/Access WIN95 upg 314.50
Microsoft Oftice Pro w/Bkshelf WIN95 CD 539.03

Microsoft Office Pro w/Bkshelf WIN95 upg CD 314.29
Microsoft Office Pro WIN95 ..... 539.03
Microsoft Office Std WIN95 ..... 449.14
Microsoft Office Std WIN95 CD 448.89
Microsoft Office Std WIN95 upg 223.97
Microsoft Office Std WIN95 upg CD 223.97
Microsoft Plusl WIN95 ..... 44.24
Microsoft Plus! WIN95 CD 45.13
Microsoft Powerpoint WIN95 ..... 296.94
Microsoft Powerpoint WIN95 upg 94.05
Microsoft Project WIN95 ..... 421.73
Microsoft Project WIN95 upg 129.20
Microsoft Publisher CD Deluxe WIN95 ..... 67.56
Microsoft Visual C++ Subscription WIN95 ..... 447.93
MS Visual C++ Subscription WIN95 upg CD 305.43
Microsoft Windows 95 ..... 183.47
Microsoft Windows 95 upg 94.77
Microsoft Windows 95 upg CD 94.77
Microsoft Word WIN95 ..... 418.60
Microsoft Word WIN95 upg 94.05
MS Word/Publisher Value Pack WIN95 CD 115.03
Microsoft Works w/Bookshelf WIN95 CD 66.45
Microsoft Works WIN95 ..... 45.13
NCD PC-Xware for WIN95 upg 77.90
Ouarterdeck Clean Sweep V2.0 WIN95 ..... 28.85
Ouarterdeck OEMM V8.0 WIN95/WIN3.1 ..... 62.16
Seber LAN Workstetion V5.0C WIN95 ..... 57.29
SPC Harvard Graphics V4.0 WIN95 upg 87.70
Stecker V4.1 WIN95 ..... 48.62
Starfish Sidekick WIN95 ..... 45.13
Symantec Norton AntiVirus WIN95 ..... 72.14
Symentec Norton AntiVirus WIN95 upg 33.75
Symantec Norton Navigetor WIN95 ..... 91.77
Symentec Norton Navigetor WIN95 trade-up 39.65
Symantec Norton Utilities WIN95 ..... 115.15
Symentec Norton Utilities WIN95 upg 57.24
Symantec pcANYWHERE32 WIN95/NT 131.80
Symantec pcANYWHERE32 WIN95/NT upg 62.70
Visio Technical V4.0 WIN95 ..... 257.61
Visio V4.0 WIN95 CD 132.88
Visio V4.0 WIN95 upg CD 73.21

MOTOROLA OnlineSURFR

new!

Everything you need for total Internet setup

◆ Authentic ITU V.34 technology ◆ 28,800 bps to 300 bps high-speed data modem ◆ 14,400 bps to 2,400 bps high-speed fax modem ◆ ITU Group III compatible; compatible with all Class 1 and 2 fax software packages ◆ ITU V.42/V.42bis and MNP 2-5 error correction and data compression ◆ Includes Spry Mosaic Internet Web browser, e-mail and news reader, home page creator, Gopher, FTP, Internet Phone and comprehensive Internet manual ◆ 5-year warranty

External ..... $179.60 CDW 66332
Internal ..... $171.18 CDW 66333

DIAMOND MULTIMEDIA Stealth64 Graphics 2120 DRAM Graphics Accelerator

new!

Easy-to-use for the novice, powerful features for the professional

◆ PCI bus architecture ◆ 1MB DRAM, upgradable to 2MB ◆ 1280 x 1024 maximum noninterlaced resolution ◆ Flicker-free refresh to 120Hz ◆ 64-bit graphics performance, S3 Vision Series controller ◆ 5-year warranty

$97.96 CDW 66602

ViewSonic® 15GA PerfectSound Multimedia Monitor

new!

See and hear the difference!™

◆ 15" (14.0" diagonal viewable area) flat square CRT ◆ .27mm dot pitch ◆ Non-glare Super Contrast screen ◆ 1,280 x 1,024 maximum resolution; 1,024 x 768 at 86Hz ◆ OnView™ on-screen menu controls ◆ High fidelity dome speakers built into bezel ◆ Microphone, headphone jack and external microphone port ◆ Plug and Play compatible (requires DDC-compatible video card) ◆ Swedish TCO and MPR-II compliant ◆ 3-year limited warranty

$488.97 CDW 65206

CDW WINNER OF SEVEN COMPUTER SHOPPER BEST BUY AWARDS

CDW® sells for less and services you better!™

800-865-4CDW (4239)

Visit our newly redesigned web site! www.cdw.com

CDW Computer Centers, Inc. • 1020 E. Lake Cook Road • Buffalo Grove, IL 60089

PCW 1672
PC World 6/96

YOU'RE GOING PLACES! GET MOBILE AT CDW®

COMPUTER DISCOUNT WAREHOUSE™

TOSHIBA Tecra 720CDT

133MHz Pentium® processor

intel inside pentium processor

- 133MHz Intel Pentium® processor
- 16MB RAM std., 144MB max.
- 1.2GB removable hard drive
- 6X CD-ROM drive
- 12.1" TFT active-matrix color display
- Integrated 28.8K bps (V.34) modem
- Lithium Ion battery

new!

720CDT ..... **$7279.92** CDW 66319

Call CDW® for details on Toshiba's Tecra 700 models with the 120MHz Pentium® processor, 1.2GB removable hard drive and 11.3" color display!

Tecra 700CT 16MB RAM, active-matrix ..... **$4833.49** CDW 61420

Tecra 700 4X CD-ROM drive ..... **$293.20** CDW 57578

CDW®'s Best Notebook Value

NEC Versa V Series

Superior NEC performance and value

Special Purchase!

- SL-enhanced IntelDX2™ 50MHz or IntelDX4™ 75MHz CPU
- 4MB RAM, expandable to 20MB (V/50C) or 32MB (V/75C)
- 340MB or 540MB removable hard drive
- 9.5" or 10.1" TFT active-matrix color display
- PCMCIA slot: two Type II or one Type III

V/50C 50MHz, 340MB hard drive, 9.5" display **$1269.00** CDW 44301

V/75C 75MHz, 540MB hard drive, 10.1" display **$1499.00** CDW 53855

Toshiba Satellite Pro 100CS

Value-packed mobile computing solution

new!

intel inside pentium processor

- 75MHz Intel Pentium® processor
- 8MB EDO RAM std., 40MB max.
- 500MB hard drive
- 10.4" dual-scan display
- NiMH battery
- Integrated AC adapter ◆ 6.9 lbs.

$1939.65 CDW 64741

IBM® ThinkPad® 760 Series

IBM Business Partner

12.1" DISPLAY!

- 90MHz or 120MHz Intel Pentium® processor
- 8MB RAM std., 64MB max.
- 1.2GB hard drive ◆ 4X CD-ROM
- 12.1" TFT active-matrix color display
- Integrated microphone and speakers
- 28.8K bps data/fax modem ◆ 3-year warranty

intel inside pentium processor

BYTE

PC MAGAZINE

760CD 90MHz **$6699.00** CDW 59017

760CD 120MHz **$6899.00** CDW 64518

COMPAQ LTE 5000 Series

The ultimate in power and flexibility

The Compaq LTE 5000s are high-performance, Pentium® processor-based notebooks that feature an innovative modular design for complete flexibility and the industry's first modular expansion base.

new! at CDW®!

- 8MB RAM standard, expandable to 72MB
- 256KB, 64-bit Level 2 cache ◆ 32-bit PCI local bus
- Integrated EasyPoint II pointing device
- Full-size, 101-key compatible keyboard
- 16-bit audio with display mounted stereo speakers and integrated microphone
- Accepts two Type II or one Type III PC cards
- Pre-loaded Windows® 95, Windows V3.1, MS-DOS V6.0

	LTE 5000	LTE 5000	LTE 5000	LTE 5100	LTE 5100	LTE 5200
CPU	75MHz Pentium®	75MHz Pentium®	75MHz Pentium®	90MHz Pentium®	90MHz Pentium®	120MHz Pentium®
Display	10.4 dual-scan color	11.3 dual-scan color	10.4 active-matrix color	10.4 active-matrix color	10.4 active-matrix color	10.4 active-matrix color
Resolution	640 x 480	800 x 600	640 x 480	800 x 600	800 x 600	800 x 600
Hard drive	510MB	810MB	810MB	810MB	810MB	1.35GB
CD-ROM	optional	optional	optional	optional	double-speed	optional
Battery	NiMH	NiMH	NiMH	NiMH	NiMH	Lithium Ion
Weight	7.1 lbs.	7.5 lbs.	7.3 lbs.	7.4 lbs.	7.7 lbs.	7.0 lbs.
	$2879.37	$3264.57	$3648.77	$4032.97	$4417.17	$4801.37
	CDW 60595	CDW 60596	CDW 60597	CDW 60598	CDW 60599	CDW 60600

Designed for Microsoft Windows 95

intel inside pentium processor

The Intel Inside® Logo and Pentium® are Registered Trademarks of Intel Corporation

CDW WINNER OF SEVEN COMPUTER SHOPPER BEST BUY AWARDS

CDW® sells for less and services you better!™

800-865-4CDW (4239)

Visit our newly redesigned web site! www.cdw.com

FREE configuration of your new notebook purchase from CDW®

©1996 CDW Computer Centers, Inc.

PCW1672
PC World 6/96

Circle 68 on reader service card

CDW CIRCLE OF SERVICE

MAG INNOVISION

NEW!

Technitron Series

The way colors are meant to be seen

- 15" Trinitron* CRT, 14" viewable image (DX15T) ◆ 17" Trinitron* CRT, 16.1" viewable image (DX17T) ◆ .25mm aperture grille pitch
- 1280 x 1024 maximum resolution
- Refresh rates up to 75Hz at 1024 x 768
- Plug and Play supports Windows* 95 and VESA*'s Display Data Channel ◆ 3-year limited warranty

energy star — EPA POLLUTION PREVENTER

DX15T	$406.93	CDW 62089
DX17T	$781.41	CDW 62091

WHY PAY RETAIL?

CDW® Sells For Less!™

iomega Zip Drive

Endless capacity and complete mobility

*Receive FREE caddy with purchase of 6 Zip disks!**

Iomega's Zip™ drive offers unlimited hard drive expansion, provides high-capacity mobile storage for use anywhere, and makes data backups fast, easy and worry-free.

◆ 100MB uncompressed/200MB compressed capacity on a single 3.5" Zip disk ◆ 29ms seek time, up to 1.4MB/second sustained transfer rate ◆ Parallel or SCSI interface (SCSI host adapter sold separately) ◆ Includes Zip Tools™ software ◆ Compact and portable: 1.5" x 5.35" x 7.25", 1 lb. ◆ 1-year warranty on drive; limited lifetime warranty on disks

Parallel	$199.00	CDW 51392
SCSI	$199.00	CDW 51390
3.5" 100MB Zip disk	$19.95	CDW 51396

** While supplies last*

HARDWARE, SOFTWARE & PERIPHERALS AT DISCOUNT PRICES

COMPUTER DISCOUNT WAREHOUSE™

NETWORKING PRODUCTS

NOVELL

NetWare V4.1

5 User CD	568.22
10 User CD	1293.52
25 User CD	1885.46
100 User CD	3883.55

NetWare V4.1 upgrade

5 User to 5 User CD	249.58
5 User to 10 User CD	954.33
5 User to 25 User CD	1552.56
10 User to 10 User CD	503.04
10 User to 25 User CD	1316.84
10 User to 50 User CD	1752.52
25 User to 25 User CD	755.09
25 User to 50 User CD	1402.61
25 User to 100 User CD	2398.80
50 User to 50 User CD	1004.68
50 User to 100 User CD	2002.45
100 User to 100 User CD	1675.30

NetWere V3.12

5 User 3.5"	619.21
10 User 3.5"	1364.16
25 User 3.5"	2003.61
50 User 3.5"	2796.65
100 User 3.5"	3883.55

Microsoft BackOffice

Microsoft Windows NT

Windows NT Network Value Peck	894.56
Windows NT Server, CD	628.03
Single client license	38.26
20 client license pack	503.27

Microsoft SQL Server

SQL Server, CD	887.93
SQL Server upgrade, CD	445.72
Single client license	133.52
20 client license peck	2118.96

Microsoft Systems Mgmt Server

SMS Server, CD	583.18
SMS Server upgrade, CD	569.88
Single client license	48.14

Microsoft SNA Server

SNA Server, CD	359.59
Single client license	56.73
20 client license pack	865.85

Microsoft Mell Server

Mail Server, CD	236.95
Mail Server upgrade, CD	296.94
5 client license pack	239.45

3Com®

3C509B Etherlink III coax	109.75
3C509B Etherlink III coax 10BT	103.89
3C509B Etherlink III 10BT 5pk	416.70
3C509B Etherlink III 10BT + AUI	107.98
3C509B Etherlink III 10BT + AUI 5pk	441.95
3C509B Etherlink III combo	122.07
3C509B Etherlink III combo 5pk	513.67
3C509B Etherlink III PCI 10BT	123.71
3C509B Etherlink III PCI combo	164.85
3C595 Fast Etherlink PCI 10/100BT	161.91
3C16170 Linkbuilder TP/12 port	319.36
3C16670 Linkbuilder FMSII 12 port	511.66

Artisoft

NodeRunner/SI 2000A	84.98
NodeRunner/SI 2000T	71.80
NodeRunner Pro combo	79.45
T-Runner 8-port II 10BT	164.43
T-Runner II 16-port 10BT	322.93
Simply LANtastic starter kit	163.79
LANtastic V6.0	74.34
LANtastic V6.0 5 user	304.88
LANtastic V6.0 Starter Kit, coax	225.30
LANtastic V6.0 add-on kit, coax	117.93
LANtastic V6.0 add-on kit, 10BT	117.93

LANtastic for Windows® 95 also available, call CDW today for details.

ASP

ASP COMPUTER PRODUCTS, INC.

JetLAN/P Plus pocket server	272.28
Intelligent AutoSwitch, 2 comp to 1 printer	24.43
Intelligent AutoSwitch, 4 comp to 1 printer	35.94
SNAP starter kit-2 computers, 1 printer	109.80
SNAP add-on transmitter	41.92

Bay Networks

SynOptics System 800 10BT 8-port hub	204.00
SynOptics System 800M 10BT 8-port hub	536.60

IBM

Token Ring Auto Adapter 16/4 ISA	228.88
IBM Token Ring MAU	385.99

NETWORKING PRODUCTS

intel.

EtherExpress PRO/100Mbps PCI	139.01
EtherExpress PRO/100Mbps PCI 5pk	619.36
EtherExpress PRO/100Mbps EISA	241.92
EtherExpress PRO/10 Flsh 10BT	106.60
EtherExpress PRO/10 Flsh 10BT 5pk	414.33
EtherExpress PRO/10 Flsh combo	113.80
EtherExpress PRO/10 Flsh combo 5pk	465.67
EtherExpress 16 10BT	99.40
EtherExpress 16 10B T 5pk	458.76
EtherExpress MCA 10BT	166.94
EtherExpress 16 combo	119.20
EtherExpress 16 combo 5pk	542.71
EtherExpress EISA, coax	402.82
EtherExpress Flsh combo	131.64
EtherExpress Flsh combo 5pk	592.28
TokenExpress PRO ISA LAN adapter	242.73
NetportExpress EL Ethernet	373.30

SMC®

EtherEZ 10BT	92.03
EtherEZ coax	91.63
EtherEZ combo	104.81
EtherPower 10/100BT PCI	146.65
EtherPower 10/100BT PCI 5pk	694.95
EtherPower 10BT PCI	122.66
EtherPower 10BT 5pk	506.62
EtherPower coax PCI	148.63
EtherPower coax PCI 5 pk	665.62
TigerHub TP6 6 port + AUI	165.83
TigerHub TP6B 6 port + BNC	181.52
TigerHub TP12 12 port + AUI	355.06
3608 Ethernet 8 port hub 10BT	288.21
3512 Ethernet 12+2 port hub 10BT	529.05
PC600WS ARCNET coax	123.61
ARCNET 8 port active hub coax	223.86
TokenCard Elite 16/4	211.74

THOMAS-CONRAD

TC6245 ARCNET coax	175.30
TC5055 Ethernet 8 port hub 10BT	339.47
TCVG045 AnyLAN ISA adapter	198.22
TCVG047 AnyLAN EISA adapter	229.36

WYSE

Link MC80 14" color	472.03
Link MC5 amber/green/white	269.97
Wyse 55 amber/green/white	254.45
Wyse 60 amber/green/white	336.54
Wyse 160 amber/green/white	384.41

Xircom

PE310BC pocket Ethernet coax	304.12
PE310B2 pocket Ethernet coax	266.01
PE310BT pocket Ethernet 10BT	266.01
PT316CTP pocket Token Ring III	448.10
PPX03 Parallel port multiplexor	76.66

TAPE & REMOVABLE MEDIA DRIVES

COLORADO MEMORY SYSTEMS INC.

Jumbo 350 internal	103.71
Jumbo 1400 internal	226.67
Trakker 350MB parallel port w/tape	164.65
T1000E 800MB parallel port	189.68
T1000 800MB Travan w/tape	161.24
PowerTape 2GB external w/tape	1089.98

CONNER

Tape*Stor 800MB Travan internal	149.35
Tape*Stor 800MB Travan parallel	246.53
Tape*Stor 850MB parallel	269.73
Tape*Stor 3200MB internal	259.20
Tape*Stor 4GB Internal IDE	351.03

iomega

Zip drive 100MB parallel interface	199.00
Zip drive 100MB SCSI interface	199.00
Jaz drive 1GB external SCSI-II interface	599.00
Jaz drive 1GB internal SCSI-II interface	499.00
Jaz drive one 1GB cartridge	124.00
Ditto Easy 800MB Travan tape drive external	149.00
Ditto Easy 800MB Travan tape drive internal	129.00

TAPE & REMOVABLE MEDIA DRIVES

MICROSOLUTIONS

Backpack 3.5" 1.44MB floppy parallel	151.71
Backpack 800TD 800MB Travan parallel	159.25

EXABYTE

EXB-8700 8MM	1669.52
EXB-8505XL 7GB tape backup internal	1878.89

SyQuest®

EZ135 135MB internal IDE interface	194.85
EZ135 135MB external SCSI interface	201.89
EZ135 135MB cartridge	23.11
EZ135 135MB external parallel interface	245.32

MULTIMEDIA AND CD

Creative Labs

Discovery CD 4x PnP multimedia kit	274.48
Blaster CD 4x kit	125.69
Sound Blaster Value CD 4x kit	233.69
Sound Blaster 16/3D value edition (IDE)	94.63
Sound Blaster AWE32 PnP	222.19

ADS VGA to TV Elite internal	128.93
ADS VGA to TV Elite external	195.05
ALPS 4X internal CD-ROM chenger	307.01
Advent PP570 speakers 35W	245.18
Advent PP270 speakers 25W	112.52
Advent PP170 speakers 5W	64.56
Advent PP622 spkrs/subwoofer	185.61
Altec Lansing ACS500 surround system	299.39
Connectix QuickCam for Windows	98.05
Diamond Multimedia Kit ULTRA 8X CD	431.81
Diamond Multimedia Kit 4400 4X CD int	286.26
Jensen JPS35 speakers 5W	57.26
Jensen JPS45 speakers 10W	95.78
Microsolutions 4X CD parallel	277.64
Microsolutions 4X CD parallel w/sound	379.81
Minolta Snappy video still capture	195.98
NEC 6Xe	491.08
NEC 6Xi	342.15
NEC 4Xc, 4X, 7 disc changer	342.15
NEC 4x4, 4X, 4 disc changer	273.20
Pioneer DRM624X 4X, 6 disc changer	294.93
Plextor 6X internal	334.10
Sigma Designs RealMagic MPEG	341.56
Sony PRD-150 portable PCMCIA Discman®	342.66
Sony 4X internal w/IDE interface	106.89
Sony 4X internal w/SCSI-2 interface	155.25
SunMoonStar 6X portable CD-ROM drive	259.37
SunMoonStar 6X internal CD-ROM drive	178.41
Toshiba 3701B SCSI 6.7X internal	251.15
Turtle Beach Tropez Plus 32	219.11
Turtle Beach TBS-3001 4X 3-speed	187.80
Yamaha YST M-15 speakers	69.63
Yamaha YST M-15 speakers & subwoofer	169.86

INPUT DEVICES

ALPS

Desktop Glidepoint	65.87
GlidePoint Windows 95 keyboard	94.11

CALCOMP

Drawing Slate II 4x5 w/pressure pen	128.25
Drawing Slate II 6x9 w/pressure pen	196.96
Drawing Slate II 12X12 4 button cordless	219.39

EPSON

PhotoPC digital camera	499.00
ActionScanning System II	478.81
ES-1000C	727.67
ES-1200ProPC	1125.16

HEWLETT® PACKARD

HP ScanJet 4S	301.35
HP ScanJet 4C	938.66
HP ScanJet 4C document feeder	453.97

LOGITECH

MouseMan 96	54.64
PageScan Color Scanner	367.59
TrackMan Marble	85.11
TrackMan Livel cordless pointer	118.35

KODAK

DC40 Digital Science Camera	699.00
DC50 Digital Science Camera	999.00

MICROTEK

Scanmaker E3 color flatbed	375.29
ScanMaker E6 color flatbed	556.49
ScanMaker III color flatbed	1985.90
Scanmaker 35T slide scanner	684.66

INPUT DEVICES

UMAX

Vista-S6 PCPRO	651.73
Vista-S6 PCLE2	565.66
Vista-S12 PCPRO2	841.13
Powerlook II PCPro2	2707.55

VISIONEER

PaperPort VX	278.34

MONITORS

Mag Innovision DX1495 PnP 14"	282.13
Mag Innovision DX1595 PnP 15"	374.14
Mag Innovision MXP17F	829.49
Mag Innovision DX1795 PnP 17"	676.32
Mag Innovision MX21F	1551.13
Magnavox CM2089 14" .28	246.53
Magnavox CM2099 14" .28 NI	252.29
Magnavox CM2015 15" .28 1024	337.18
Magnavox CM1215 15" .28 1280	354.94
Magnavox CM4018 17" .28	603.67
Magnavox 20CM64 20" .28 1280	1013.19
Magnavox CM5600 20" .28 1600	1278.17
NEC XV15+ 15"	473.13
NEC XV17+ 17"	799.84
NEC XE21 21"	1659.65
NEC XP17 17"	1058.89
NEC XP21 21"	1919.54
Samsung 15GLi 15"	469.00
Samsung 17GLi 17"	749.00
Samsung 17GLsi 17"	949.00
Sony 15SFII 15" PnP	484.45
Sony 15SX 15" PnP	428.41
Sony 17sell 17"	1075.61
Sony 17SFII 17" PnP	892.81
Sony Multiscan 20sfII PnP	1775.84
ViewSonic 15GS 15"	415.69
ViewSonic 17GS 17"	667.35
ViewSonic 21PS 21"	1579.72

VIDEO CARDS

ATI Graphics Xpression ISA 2MB	161.76
ATI Graphics Xpression ISA 1MB	106.04
ATI Graphics Xpression VLB 2MB	157.14
ATI Graphics Xpression PCI 2MB	161.76
ATI Graphics Pro Turbo ISA 2MB	258.06
ATI Graphics Pro Turbo VLB 2MB	221.87
ATI Graphics Pro Turbo PCI 2MB	269.33
ATI Graphics Pro Turbo PCI 4MB	403.58
Diamond SpeedStar Pro ISA 1MB	93.68
Diamond Stealth Video VLB 2MB	207.39
Diamond Edge 2120XL, 1MB DRAM	213.34
Diamond Edge 2200XL, 2MB DRAM	275.33
Diamond Edge 3240XL, 2MB VRAM	374.37
Diamond Edge 3400XL, 4MB VRAM	522.01
Intel Smart Video Recorder Pro	402.82
Matrox Millennium PCI 2MB WRAM	314.51
Matrox Millennium PCI 4MB WRAM	456.92

OVERDRIVE PROCESSORS

intel.

Intel OverDrive DX2/50	115.54
Intel OverDrive DX2/66	129.40
Intel OverDrive DX4/75	138.66
Intel OverDrive DX4/100	178.74
Intel OverDrive Pentium 63MHz	178.74
Intel OverDrive Pentium 83MHz	253.45
Intel OverDrive Pentium 120/133MHz upg for 560, 566	339.11
Intel OverDrive Pentium 120/133MHz upg for 5/75	339.11
Intel OverDrive Pentium 150MHz upg for 5/90	414.84
Intel OverDrive Pentium 166MHz upg for 5/100	556.72

MEMORY UPGRADES

simple TECHNOLOGY

Lifetime Warranty!

Compaq Prolinea 4MB	127.53
Compaq Prolinea 8MB	238.54
Compaq Prolinea 16MB	385.35
HP LaserJet 4P 4MB	107.39
HP LaserJet 4P 8MB	197.68
HP LaserJet 4 4MB	127.53
HP LaserJet 4 8MB	238.54
HP LaserJet 4 8MB	238.54
IBM ThinkPad 755 8MB	333.01
IBM ThinkPad 755 16MB	467.56
NEC Versa V 4MB	179.58
NEC Versa V 8MB	344.59
NEC Versa V 16MB	611.04
Toshiba 1900-4600 4MB	192.79
Toshiba 1900-4600 8MB	356.15
Toshiba 1900-4600 16MB	585.16
Toshiba T2100, T2500 4MB	189.52
Toshiba T2100, T2500 8MB	351.83
Toshiba T2100, T2500 16MB	629.13

Most orders ship the same day

NASDAQ

BUY WITH CONFIDENCE
CDW® IS A NASDAQ TRADED COMPANY
TICKER SYMBOL CDWC
D & B rated 5A1
Duns 10-762-7952

DISCOVER NOVUS — VISA — MasterCard — American Express Cards

Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material. The cost of insurance is 0.35% (0.0035) of the order total. Packaging materials will not exceed $4.00 for single package shipments or $6.00 for multi-package shipments. Before returning any product, you must obtain an RMA number. Non-defective returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices and products, CDW reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes or typographical errors in advertisements. All trademarks and registered trademarks are the sole property of their respective owners.

CDW® TELEPHONE HOURS

Sales
Monday-Friday 7am-9pm CDT
Saturday 9am-5pm CDT
Tech Support for Customers
Monday-Friday 8am-9pm CDT
Saturday 9am-5pm CDT

If you find a better price, call CDW® before you buy

Fax: 847-465-6800
Sales: 800-865-4CDW (4239)

CDW Computer Centers, Inc. • 1020 E. Lake Cook Road • Buffalo Grove, IL 60089

PCW1672
PC World 6/96

intel

EtherExpress PRO/100

100Mbps Fast Ethernet adapters

Intel's EtherExpress™ PRO/100 adapters are the easiest way to migrate to Fast Ethernet networking. PRO/100 adapters integrate easily into your existing Ethernet environment to deliver these powerful advantages:

◆ High-performance 32-bit architecture ◆ Seamless migration from 10 to 100Mbps with one driver, one connector and hub speed auto-sensing ◆ Proven Ethernet technology ◆ One-step installation ◆ Limited lifetime warranty

PCI	$139.01	CDW 59239
PCI, 5 pack	$619.36	CDW 59240
EISA	$241.92	CDW 47330
Workgroup bundle	$1879.57	CDW 66257

WHY SETTLE FOR LESS?

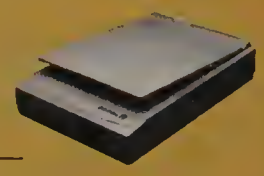
CDW® SERVICES YOU BETTER!™

MICROTEK *Better Images Through Innovation.* NEW!

ScanMaker E6

30-bit, high-resolution color scanner

◆ 600 x 1200 dpi optical resolution, 4800 x 4800 dpi maximum ◆ Fast, single-pass scanning ◆ Legal-sized scanning area ◆ Includes imaging software, OmniPage LTD OCR, ScanWizard, SCSI card and cable



E6 Standard with ImageStar II
$556.49 CDW 65672

E6 Pro with Photoshop V3.05 (CD)
$738.93 CDW 65671

ScanMaker E3

◆ 24-bit color ◆ 300 x 600 dpi optical resolution ◆ Single-pass scanning ◆ Includes ImageStar II, OmniPage LTD OCR, ScanWizard, SCSI card and cable

$375.29 CDW 63623

CDW

CDW® CARRIES OVER 20,000 PRODUCTS. IF YOU DON'T SEE IT, CALL!

COMPUTER DISCOUNT WAREHOUSE™

COMPUTERS

TOSHIBA

100CS 5/75 8MB 500MB pas color	1939.65
T2130CS DX4/75 500MB pes color	1578.53
T2130CT DX4/75 500MB act color	2109.19
Portege 610CT 5/90 720MB act color	3888.98
410CS 5/90 8MB 772MB pas color	3135.97
410CDT 5/90 8MB 772MB act clr CD	4319.52
Tecra 700CS 5/120 8MB 1.2GB pas color	3868.13
Tecra 700CT 5/120 16MB 1.2GB act clr	4833.49
Tecra 710CDT 5/133 16MB 1.2GB act clr (800x600)	6798.87
Tecra 720CDT 5/133 16MB 1.2GB act clr (1024x768)	7279.92

AST

Ascentia J10 5/75 8MB 800MB dual scan	2412.45
Advantage! Explorer 212	1831.01
Ascentia J30 5/100 8MB 800MB dual scan	2823.68
Ascentia J30 5/100 8MB 800MB ect color	3099.41
Ascentia P30 5/100 8MB 800MB dual scan	3289.95
Ascentia P30 5/100 8MB 1.2GB dual scan	3754.13
Ascentia P50 5/133 8MB 1.2GB active color	4221.60
Ascentia P50 5/133 8MB 1.2GB active color	4685.55

Advantage! desktops

624-5/100 16MB 1.2GB 14.4K bps 6XCD	1973.73
626-5/133 16MB 1.2GB 14.4K bps 6XCD	2095.43
628-5/150 16MB 1.6GB 14.4K bps 6XCD	2284.55
822-5/100 16MB 1.2GB 28.8K bps 6XCD	1973.73
824-5/133 16MB 1.6GB 28.8K bps 6XCD	2239.36
826-5/150 16MB 2.1GB 28.8K bps 3disc6XCD	2569.57
828-5/166 16MB 2.1GB 28.8K bps 3disc6XCD	2759.57

COMPAQ

COMPAQ DESKTOPS

ProLinea Series Desktops

ProLinea 575e 5/75 8MB 630MB	1344.70
ProLinea 575e 5/75 8MB 1.06GB	1457.70
ProLinea 5100e 5/100 8MB 630MB	1457.70
ProLinea 5100e 5/100 8MB 1.06GB	1582.00
ProLinea 5120e 5/120 8MB 630MB	1582.00
ProLinea 5120e 5/120 8MB 1.06GB	1706.30
ProLinea 575 5/75 8MB 630MB	1514.20
ProLinea 575 5/75 16MB 1.08GB	1943.80
ProLinea 590 5/90 8MB 630MB	1569.70
ProLinea 590 5/90 16MB 1.08GB	1999.10
ProLinea 5100 5/100 8MB 630MB	1593.30
ProLinea 5100 5/100 16MB 1.08GB	2022.70
ProLinea 5120 5/120 16MB 1.08GB	2147.00

ProLinea Series Mini-Towers

ProLinea 575 MT 5/75 8MB 630MB	1536.80
ProLinea 575 MT 5/75 16MB 1.08GB	1966.20
ProLinea 5100 MT 5/100 16MB 1.08GB	2045.30
ProLinea 5133 MT 5/133 16MB 1.08GB	2339.10
ProLinea 5133 MT 5/133 16MB 2GB	3186.60
ProLinea 5150 MT 5/150 16MB 2GB	3282.65
ProLinea 5166 MT 5/166 16MB 2GB	3508.85

Deskpro Series Deaktops

Deskpro 575 5/75 8MB 840MB	1666.75
Deskpro 5100 5/100 8MB 840MB	1802.35
Deskpro 5100 5/100 16MB 1.2GB	2237.40
Deskpro 5120 5/120 16MB 1.2GB	2361.70
Deskpro 5133 5/133 16MB 1.2GB	2531.20
Deskpro 5133 5/100 16MB 1.2GB	2712.00
Deskpro 5133 5/133 16MB 2GB	2689.40
Deskpro 5133 5/133 16MB 2GB	3299.60
Deskpro 5150 5/150 16MB 1.2GB	2869.20
Deskpro 5150 5/150 16MB 2GB	3028.40
Deskpro 5150 5/150 16MB 2GB	3395.65
Deskpro 5166 5/166 16MB 1.2GB	3096.20
Deskpro 5166 5/166 16MB 2GB	3621.65
Deskpro 5166 5/166 16MB 2GB	3435.20

LOOKING FOR THE LATEST COMPAQ NOTEBOOKS? CALL CDW® FOR A COMPLETE LINE UP!

HEWLETT® PACKARD

OmniBook Portables

HP OmniBook 600C 4/75 4MB 340MB dual scan	2194.84
HP OmniBook 600CT 4/75 8MB 340MB act color	2496.61
HP OmniBook 5000CT 5/90 8MB 1.2GB act color	5055.54
HP OmniBook 5000CT 5/120 8MB 1.2GB act color	6015.06
HP OmniBook 5000CTS 5/90 16MB 1.2GB act color	5495.66
HP OmniBook 5000CTS 5/120 16MB 1.2GB act color	6072.87

NEC

Versa V 4/50 4MB, 340MB act clr	1269.00
Versa V 4/75 4MB, 540MB act clr	1499.00
Versa 550D Cynx 5/100 8MB 540MB dual scan	1799.00
Versa 2200C 5/75 8MB 810MB act clr	2449.00
Versa 2205C 5/75 8MB 810MB act clr modem	2499.00
Versa 4000 5/75 8MB 810MB CD	3799.00
Versa 4050C 5/90 8MB 810MB act clr CD	4499.00
Versa 4050H 5/90 8MB 810MB act clr	4499.00
Versa 4080H 5/120 8MB 1GB act clr	4999.00

COMPUTERS

IBM

ThinkPad portables

701C DX4/75 8MB 540MB act color	1999.00
760C 5/90 8MB 720MB 12.1 act color Selecta	5499.00
760C 5/120 8MB 720MB 12.1 act color Selecta	5699.00
760C 5/90 8MB 720MB 10.4 act color WIN95	4999.00
760C 5/120 8MB 720MB 12.1 act color WIN95	5699.00
760C 5/120 8MB 1GB 12.1 act color Selecta	6999.00
760C 5/120 8MB 1GB 12.1 act color WIN95	5999.00
760CD 5/90 8MB 1.2GB 12.1 act color Selecta	6699.00
760CD 5/90 8MB 1.2GB 12.1 act color WIN95	6699.00
760CD 5/120 8MB 1.2GB 12.1 act color Selecta	6899.00
760CD 5/120 8MB 1.2GB 12.1 act color WIN95	6899.00

Call for pricing on the latest ThinkPad models- 760L & 760LD

PC300 Series desktops

PC300 5/90 16MB 850MB 3 bays	1989.00
PC300 5/100 16MB 850MB 3 beys	2069.00
PC300 5/13316MB 635MB 3 bays	2299.00
PC300 5/166 16MB 1.2GB 3 bays	2959.00
PC300 5/75 16MB 850MB 5 bays	1969.00
PC300 5/100 16MB 850MB 5 bays	2129.00
PC300 5/133 16MB 635MB 5 beys	2359.00
PC300 5/133 16MB 1.2GB 5 bays	2499.00
PC300 5/166 16MB 1.2GB 5 bays	3019.00

PC700 Series desktops

PC700 5/100 16MB 1GB 5 bays Selecta	2829.00
PC700 5/133 16MB 1GB 5 bays Selecta	3347.00

SAMSUNG ELECTRONICS

SENS 410 5/75 8MB 540MB dual scan	1799.00
SENS 410 5/100 8MB 540MB dual scan	1999.00
SENS 410 5/100 8MB 810MB act clr	2499.00
SENS 410 5/120 8MB 810MB act clr	2999.00
SENS 810 5/100 8MB 810MB dual scan	2999.00
SENS 810 5/100 16MB 1.3GB act clr	3499.00
SENS 810 5/120 16MB 1.3GB act clr	3999.00
SENS 810 5/133 16MB 1.3GB act clr	4499.00

TEXAS INSTRUMENTS

Extensa 550 5/75 8MB 524MB dual color	1979.84
Extensa 560CD 5/75 8MB 810MB dual clr CD	2723.32
Extensa 560CDT 5/75 8MB 1.2GB act clr CD	3657.42
TM5000 5/75 8MB 810MB act color	2919.34
TM5100 5/90 8MB 1.2GB act clr 800x600	3657.42
TM5200 5/120 8MB 1.2GB act color	4814.18
TM5300 5/133 8MB 1.2GB act color	5286.45

PRINTERS

OKIDATA

184 Turbo	228.28	ML591	603.67
ML320	315.50	Pecemark 3410	2051.42
ML321	445.15	OL600e	399.00
ML380	222.74	OL610e/PS	699.46
ML395	1005.83	OL810E	755.42
ML520	379.78	OL1200	1099.72
ML521	509.07	OKIJET 2010	326.48
ML590	445.72		

Canon

BJ30 mono	285.50	BJC610	469.00
BJC70 color	359.79	BJC4100	329.00
BJC210	239.00		

EPSON

LX300	165.41	FX2170	499.00
LO570+	246.25	DFX5000 Plus	1385.48
LQ870	443.03	DFX8000	2333.18
LQ1070+	383.04	Stylus Color IIs	236.52
LQ1170	689.85	Stylus Color II	339.00
LQ2170	599.00	Stylus Color Pro	599.00
LQ2550	963.95	Stylus 1500	995.00
FX870	289.45	Stylus Pro XL	1799.00
FX1170	376.56		

LEXMARK LASER PRINTERS

Color JetPrinter 1020	207.93
WinWriter 150c thermal inkjet	317.73
Color JetPrinter 2070	394.48
Optra E 6ppm	556.28
4039 10 Plus 10ppm	1099.57
Optra R Plus 16ppm	1414.40
Optre R Plus 16ppm, 2 paper trays	1615.17
Optra LX Plus 16ppm	1944.00
Optra LXi Plus 16ppm	2835.20
Optra C color laser	6232.32

Panasonic

1150	132.80	3123	251.58
2023	179.40	KX-P6100 Laser	386.99
2130	199.80	KX-P6500 Laser	434.40
2135 Color	247.53		

PRINTERS

TEXAS INSTRUMENTS

microLaser 600	735.27
microLaser Pro 600 PS23	1174.04
microLaser Pro E	1365.49
microLaser PowerPro/12	1382.91
microLaser Pro/8	1111.05

HEWLETT® PACKARD

HP DeskJet 340 portable	296.69
HP DeskJet 600	199.97
HP DeskJet 600c	248.01
HP DeskJet 660C	349.41
HP DeskJet 855C	499.00
HP LaserJet 5L	479.00
HP OfficeJet inkjet fax/copier/printer	494.94
HP OfficeJet LX inkjet fax/copier/printer	585.84

COSTAR

LabelWriter XL WIN	138.62
LabelWriter XL Plus WIN	218.81

HARD DRIVES & CONTROLLERS

Maxtor

540MB EIDE	176.06
1.26GB IDE	239.78
1.6GB Fast-ATA	275.33

CONNER

540MB EIDE	175.23	1.08 Fast SCSI-2	289.66
850MB Fast-ATA	199.71	2.14GB Fast SCSI-2	603.58
1.08MB IDE	225.37	4.29GB Fast SCSI-2	961.74

Seagate

545MB Fast-ATA	181.93
631MB Fast-ATA	184.57
1.05GB F/W SCSI-2	551.21
1.6GB Fast-ATA2	305.29
1.08GB Fast SCSI-2	256.32
1.08GB Fast-ATA2	228.33
2.1GB Fast ATA-2	353.33
2.14GB Fast SCSI-2	713.00
2.14GB F/W SCSI-2	817.92
4.29GB Fast SCSI-2	956.12
9GB Fast SCSI-2	2044.42

WESTERN DIGITAL

Caviar 635MB IDE	191.31
Caviar 853MB EIDE	204.23
Caviar 1GB EIDE	226.03
Caviar 1.2GB EIDE	237.03
Caviar 1.62GB EIDE	292.62

CONTROLLERS

Acculoglc SIDE-3+ w/on-board BIOS	37.18
Acculoglc SIDE-4+ w/par, 2ser, game	27.74
Acculoglc SIDE-4VL EIDE, 16550 serial	68.24
Adaptec 1542CP SCSI Master Kit	252.96
Adaptec Power Storage ISA Kit	609.46
Adaptec Power Storage PCI Kit	609.46
Adaptec AVA1505 SCSI-2 CD Kit	48.32
Adaptec 2842 VLB SCSI-2	239.11
Adaptec PCI Ultra Wide SCSI Kit	301.81
Promise 2300+ EIDE VLB	49.57

MODEMS & COMMUNICATIONS

BOCA

Online Express 14.4 internal w/fax	52.91
Online Express 14.4 external w/fax	79.84
V.34 28.8 internal w/fax	165.11
V.34 28.8 external w/fax	209.64

Hayes

ACCURA 144 internal w/fax	79.05
ACCURA 144 external w/fax	92.23
ACCURA 288 V.34 internal w/fax	168.17
ACCURA 288 V.34 external w/fax	187.96
OPTIMA 144 external w/fax	371.72
OPTIMA 288 V.34 internal w/fax	359.58
OPTIMA 288 Business Modem	425.70

MICROCOM

Deskporte Fast ES V.34 28.8	169.52
DeskPorte 28.8P V.34	235.35

MOTOROLA

14.4 VoiceSURFR internel	97.02
14.4 VoiceSURFR external	112.86
V.34 ModemSURFR internal	159.76
V.34 ModemSURFR external	168.69
OnlineSURFR V.34 Package internal	171.18
OnlineSURFR V.34 Package external	179.60
BitSURFR ISDN adapter internal	263.97
BitSURFR ISDN adapter external	264.02
BitSURFR Pro ISDN terminal adapter	348.03

MODEMS & COMMUNICATIONS

PRACTICAL PERIPHERALS

14.4 internal w/fax	65.88
14.4 Mini Tower w/fax	79.05
V.34 28.8 internal w/fax	152.89
V.34 28.8 Mini Tower w/fax	169.99

PUREDATA

SatisFAXtion 400, internal	389.98
SatisFAXtion 400e, external	307.76
SetisFAXtion 500	269.29

SUPRA

Supra 288 faxmodem internal	183.34
Supra 288 faxmodem internal	206.42
Supra Simple Internet 288i internal	145.83
Supra SImple Internet 288 external	167.00
SupraExpress 288i PnP internal	141.13
SupraExpress 288 PnP external	161.12

U.S. Robotics

SPORTSTER MODEMS

14.4K internal w/fax	96.52
14.4K external w/fax	113.62
28.8K V.34 internal w/fax	184.73
28.8K V.34 external w/fax	204.11
Winmodem 28.8 internal w/fax	142.75
Vi 14.4K internal w/fax & voice	114.07
Vi 14.4K external w/fax & voice	133.15

COURIER MODEMS

V.34 internal w/fax	342.39
V.34 external w/fax	363.19
I-modem ISDN modem internal	585.51
I-modem ISDN modem external	633.10

ZOOM

14.4 V.32bis Voice Speakerphone internal	114.99
V.34 28.8 FaxModem internal	143.48
V.34 28.8 FaxModem external	159.94
V.34 28.8 Voice speakerphone internal	184.51

BATTERY BACKUP AND UPS

AMERICAN POWER

Back UPS Pro 280 Plug and Play	141.17
Back UPS Pro 420 Plug and Play	233.42
Back UPS Pro 650 Plug and Play	288.63
SmartUPS 700	362.89
SmartUPS 1000	496.46
SmartUPS 1400	621.50
SurgeArrest Network	29.05
SurgeArrest Pro	25.89
SurgeArrest Network + Phone	44.51
Line-R 600	117.72

TRIPPLITE

BC250	93.20
BC PERS 420	133.93
BC PRO 550	181.42
BC PERS 500	166.89
BC PRO 675	213.24
BC PRO 850	275.86
BC PRO 1050	309.20

TRIPPLITE SMART UPS SERIES

SMART 280 LAN	215.36
SMART 450 LAN	265.44
SMART 675 LAN	303.95
SMART 850 LAN	379.58
SMART 1050 LAN	439.94
Isobar 4 OUTLET	38.99
Isobar 6 OUTLET	46.78

PCMCIA CARDS

3Com Etherlink III PCMCIA	156.76
3Com Etherlink IIIC combo	379.88
Adaptec APA1460 SCSI-2	169.04
Hayes EZJack 14.4 w.fax	163.46
Hayes EZJack V.34 w/fax	226.29
IBM Token Ring 16/4	304.88
Linksys Ethernet combo	135.70
Megahertz XJack 14.4 data/fax	73.11
Megahertz XJack Gold 14.4 data/fax	79.56
Megahertz 28.8 V.34 w/XJACK cellular	293.53
Megahertz 28.8 V.34 data/fax w/ XJack	301.37
Megahertz 10BT Enet adapter w/XJack	134.03
Megahertz cell-ready 28.8/Enet w/XJack	441.06
Motorola Montana 28.8 cellular	252.32
Motorola Marquis 28.8 data/fax & LAN	402.12
Motorola Mariner 28.8 data/fax & LAN cellular	486.52
New Media Bus Toaster SCSI-2 host	197.06
New Media Wave Jammer sound card	219.11
Simple 28.8 Communicator cellular	207.57
Simple 28.8 Communicator	261.31
Simple Tech 14.4K modem + voice	95.83
Simple Tech 170MB hard drive	334.10
SMC Elite Ethernet combo	169.33
USR Sportster 14.4K	97.74
USR Sportster V.34 with DataView	275.82
Xircom Ethernet 10BT	139.23
Xircom Ethernet combo	182.33
Xircom Ethernet+modem 28.8 10BT/10B2	421.86
Xircom Ethernet+modem 14.4,10BT	322.83
Xircom Ethernet+modem combo	364.50
Xircom Token Ring 16/4	409.70

CDW WINNER OF SEVEN COMPUTER SHOPPER BEST BUY AWARDS

CDW® sells for less and services you better!™

800-865-4CDW (4239)

Visit our newly redesigned web site! www.cdw.com

Call for a FREE CDW® catalog!

©1996 CDW Computer Centers, Inc

PCW1672
PC World 6/96

Circle 68 on reader service card

MIDWEST COMPUTER WORKS

YOUR COMPLETE

✔ Wide Selection ✔ Knowledgeable Sales Staff ✔ On-Time Delivery

5 Star Highlights

"Wide selection and quick delivery are this company's stock and trade."
PC Computing Magazine

1 HIGHLY TRAINED SALES TEAM!
Let our professional sales team help you with all your computer needs. All of our representatives are technically trained to service you better.

2 SATISFACTION GUARANTEED!
Here at Midwest Computer Works we're dedicated to delivering nothing but the finest name brand computer equipment at the lowest possible prices. A No-Hassle Money Back Guarantee lets you know that no sale is complete until YOU'RE satisfied.

3 INCREDIBLE SELECTION!
With over 30,000 different items from cables to computers, you can be sure that what you want is IN-STOCK and ready for immediate delivery.

4 LOWEST PRICES!
Our tremendous buying power means savings to you on all major brand computers, software and peripherals, simply put, we save you money without sacrificing service!

5 EASY PAYMENT TERMS!
We accept all major credit cards, COD's, purchase orders, pre-payments and offer flexible leasing options.

OVERNIGHT SHIPPING

FedEx FREE

Supercharge your computer's performance with RAM upgrades. If you don't see your system listed, call today. We offer hundreds of upgrades for PC computers, laptops, portables, printers and more.

Partial memory deals* - simple TECHNOLOGY

AST COMPUTER
Ascentia 900N, 910N.....4MB ...$175
Ascentia 900N, 910N.....8MB ...$350
Ascentia 900N, 910N.....16MB ..$625
Ascentia 950N.....8MB ...$349
Ascentia 950N.....16MB ..$625

COMPAQ
Contura 400CX, 410CX .....4MB ...$175
Contura 400CX, 410CX.....8MB ...$342
Contura LTE Elite.....4MB ...$195
Contura LTE Elite.....8MB ...$365
Contura LTE Elite.....16MB ..$630
Contura LTE 5000.....8MB ...$315
Contura LTE 5000.....16MB ..$599

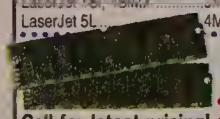
HEWLETT PACKARD
LaserJet 4P,4MV, 4V, 5P, 5MP .4MB ...$120
LaserJet 4P, 4MV, 4V, 5P, 5MP.8MB ...$229
LaserJet 4Si, 4SiMX .....4MB ...$159
LaserJet 5SI, 4SIMX .....4MB ...$319
LaserJet 5L.....4MB ...$169

HEWLETT PACKARD
LaserJet 5L.....8MB $325
LaserJet 5P, 5MP .....16MB...$499

IBM
ThinkPad 701C, CS.....8MB..$369
ThinkPad 755.....4MB ..$209
ThinkPad 755, 760.....8MB ..$349
ThinkPad 760.....16MB .$659

NEC
Versa E, V, M, P Series.....4MB ..$189
Versa E, V, M, P Series.....8MB ..$369

TOSHIBA
T2100, 2105, 2110, 2130...4MB ..$169
T2100, 2105, 2110, 2130...8MB ..$339
T2100, 2105, 2110, 2130..16MB .$769
T400, T410, 601.....8MB ..$425
Tecra.....8MB ..$457
T2400/CS, /CT, T3400 .....8MB ..$359



SIMM Modules - IN STOCK -

• 1MB or 4MB x9 70 • 2MBx32 or 36 70
Call for latest pricing! • 1MBx32 or 36 70 • 4MBx32 or 36 70
* All memory prices subject to change due to the volatile nature of the market.

LOWEST INDUSTRY PRICING AVAILABLE!

24-Hour FAX Line 1-847-459-6933
International Line 1-847-459-6884
Customer Service 1-847-459-9410
Technical Support 1-847-459-9411

ORDER DEPARTMENT
1-800-659-6757

DESKTOPS

Wyse Terminals .....ALL MODELS IN STOCK

AST
Bravo MS P-100 1.2GB 16M 1629
Bravo MS P-120 1.6G 16M.....1785
Bravo MS P-166 1.6G 16M.....2299

Canon
9140 P-100 1.275G 8M 6X-CD 14.4FAX....1599
9150 P-100 1.275G 8M 4X-COw/Changer 28.8..1799
9330 P-133 1.6G 16M 6X-CD 28.8.....2260

COMPAQ
COMPAQ AUTHORIZED SERVICE CENTER
ProLinea E Pentium 75 1.06G 8M.....1449
ProLinea E Pentium 100 630M 8M.....1459
ProLinea E Pentium 100 1.06G 8M 1569
ProLinea E Pentium 120 1.06G 8M 1695
ProLinea E Pent. Pro 150, 1.08G 16M 4XCD...4092
ProLinea E Pent. Pro 180 16M 4xCD.....4199
ProLinea Mini-Towers . *"New Models In Stock"*
Deskpro 5150 P-150 2G 16M.....3369
Deskpro XL 5133ML P-133 1.05G 16M ..3569
PROLIANT 1500, 4500 Series.....BEST PRICES
PROSIGNIA Series.....*In Stock*.....BEST PRICES

IBM
PC330 P-100 540M 8M 1520
PC330 P-133 1.2GB 16M 2329
PC350 P-166 1.2G 16M.....2949

NOTEBOOKS

AST
Ascentia 950 Pent. 75 1.2G 10.4" Psv Clr.....2289
Ascentia 950N Pent. 75 800M 10.4" Psv Clr..2242
Ascentia 950N Pent. 90 1.2G 8M 10.4" Act ..2855
Ascentia 950N Pent. 120 1.2G 11.8" Act Clr .4775
Ascentia J Pent. 100 800M 10.4" Psv 14.4 S/R Fax ..2799
Ascentia P P-133 1.2G 8M 4xCD 11.3 Act....4825

Canon
Notejet IIICX P-90 810M 11.8" Act Clr.....5512
Notejet IIICX P-120 1.2GB 8M 11.8" Act...6699

COMPAQ
Contura 420CX DX4/75 420M 10.4" Act Clr..2519
Contura 430CX DX4/100 720M Act Clr.....2899
Lte 5000 M510 P-75 510M 10.4" Psv Clr.....2869
Lte 5200 P-120 1.35G 10.4" Act Clr.....4689

NEC
Versa 4000C P-75 810M w/4xCD 10.4" Psv...3710
Versa 4050C P-90 810M w/CD 10.4" Actv Clr.4394

SHARP
CALL FOR OTHER 9000 SERIES MODELS!
PC-9070 P-133 1GB 8M 12.1" Actv Clr.....5699

TEXAS INSTRUMENTS
Extensa 450T DX4/75 340M Act Clr.....1440
Extensa 550CD P-75 540M PCI 10.4" Psv.....2459
Extensa 550CDT P-75 810M 10.4" Actv w/CD...3545
TM5100 Pentium 90 1.2G PCI 10.5" Actv...3740
TM5300 Pentium 133 1.2GB 8M 11.3" TFT ..5315

MONITORS

Amdek 14" White VGA Monochrome..119
Phillips Brilliance 15A w/Audio + mic .28..412
Samsung 17GLSI 17" 1600x1200 .26mm.....835

GoldStar
1465DLS 14" 1024x768 .28mm.....249
1727 17" 1280x1024ni .28mm.....669

MITSUBISHI
Diamond Pro17HX 17" 1280x1024 .26mm .849
Diamond Pro21TX 21" 1600x1200 .30mm.1889
MegaView Series .....CALL

VISIONMASTER by HYUNDAI
MF-8617E 17" 1280x1024 .26mm....739
MF-8221E 21" 1600x1200 .28mm.....1895
MT-9021E 21" 1600x1200 .30mm..1789

MAG INNOVISION
DX1595 15" 1280X1024 .28mm.....379
DX1795 17" 1280X1024 .26mm.....675
DX15T 15" 1280x1024 .25mm.....465
DX17T 17" 1280x1024 .25mm.....789

MAGNAVOX
7BM749 14" VGA Mono 720x400 109
CM2099 14" VGA 1024x768.28mm 245
CM2015 15" EVGA 1024x768 .28mm..320
CM4018 17" Autoscan 1280x1024 .28mm...595
20CM64 20" Autoscan 1280x1024 .31mm.....999

NANAO
F2-15 15" .28mm 1280x1024 TCO.....585
F2-17 17" .28mm 1280x1024 865
F2-17EX 17" .26mm 1600x1200 TCO ...989
T2-17TS 17" .25mm 1600x1200 TCO .1039
T2-17 .25mm 1280x1024 TCO 1075
T2-20 20" .30mm 1280x1024 TCO 1849

NEC
XV15+ / XV17+.....469 / 799
XE17 / XE21 .....997/1772
XP17 / XP21 .....1029/2148

NOKIA
449E 15" 1280x768 .28mm.....449
447L 17" 1280x1024 .28mm MPRII 689
447X 17" 1600x1200 .25mm MPRII 929
445X 21" 1600x1200 .25mm MPRII ...1899

SONY
CPD-15SX1 15" 1280x1024 .25mm.....409
CPD-15SF2 15" 1280x1024 .25mm.....469
CPD-17SF2 17" 1280x1024 .25mm.....849
CPD-20SF2 20" 1280x1024 .25mm.....1749
GDM-17SE2T 17" 1600x1200 .25mm ..1049
GDM- 20SE1 20" 1600x1200 .30mm. ..1889

ViewSonic
V15ES 15" 1024X768 .28mm.....379
V17EA 17" 1024x768 .27mm 655
V21PS 20" 1600X1280 .25mm.....1655

PRINTERS

Canon
BJ-10SX 212
BJ-30 / BJC-70 .....255/349
BJC-210.....360dpi 239
BJC-610.....720dpi Color 549
BJC-4100.....720dpi Color.....329
LBP-1260 12ppm 600dpi.....1349

EPSON
LQ1070+ / LQ1170 .....384/682
Stylus 1000 / Stylus IIs 474/242
Stylus Color II Inkjet (720dpi).....335
Stylus Pro XL (12.5"x18") 1789

FARGO
Fotofun 3x5 color printer.....383
Primera Pro.....1339
Primera Pro Postscript w/ Photoshop..1849

HEWLETT PACKARD
DeskJet 600 Mono / DeskJet 660C..203/359
DeskJet 680C / DeskJet 850C ...315/495
DeskJet 820 / DeskJet 855 .....385/505
DeskJet 1600C/DeskJet 1600CM ..1299/1969
LaserJet 4+ 12ppm 600dpi 1399
LaserJet 4M+ 12ppm 600dpi 1935
LaserJet 4V 16ppm 600dpi.*11x17*.1915
LaserJet 4MV 16ppm 600dpi.*11x17*.2772
LaserJet 5LFS 16ppm 600dpi 499
LaserJet 5P 6ppm 600dpi.....845
LeserJet 5MP 6ppm 600dpi Pstscrpt 999
LaserJet 5M.....NEW.....7255
LaserJet 5SI 24ppm.....2779
LaserJet 5SIMX 17ppm 600dpi 3892
Color LaserJet 5.....NEW 5915
OfficeJet LX *(Printer, FAX & Copier)*.....689
Copyjet Color Inkjet 2339
SEE PACIFIC DATA FOR JETDIRECT SAVINGS!

LEXMARK
Optra E 6ppm 1MB 600dpi.....575
Optra R+ 12ppm 2MB 1200dpi ...1419
Optra LXI+ 16ppm 8MB 1200dpi .2865

OKIDATA
184 Turbo 225
320 / 321.....319/442
520 / 521.....379/489
590+ / 591+ 439/599
395 / 395c.....999/1099
600e/610e/610ePS 399/489/699
Laser 810 LED 8ppm/1200 ...759/1099
OkiJet 2010.....COLORIII.....325

Panasonic
KXP-3626 / KXP-3696.....409/449
KXP-4440 .....CALL
KXP-6100 / KXP-6500.....CALL

QMS
MagiColor Laser CX 5383

SEIKO SII
Smart Label EZ30.....139

DRIVES

CD-ROM DRIVES

Goldstar GCDR560B 6X CD EIDE 119
Chinon CDS-545I 4x 230ms EIDE int..169
Microsolutions 4X Per Port 269
NEC 6XI / 6XE 335/482
NEC 4x4 CD Changer EIDE 265
Panasonic KXLD-740 2 PCMCIA.....399
Pioneer DRM 624X 6 Disk Changer ...284

PINNACLE MICRO
Pinnacle Micro Rec. CD-ROM ext. 1339
Pinnacle Micro RCD-1000 PCI Int. kit.1172

PLEXTOR
Plextor 4Plex 4x 170ms SCSI-2 int. 269
Plextor 4Plex + 4x ext. w/o cntr PnP ...340
Plextor 6Plex 6x 145ms SCSI-2 Int 299

SONY
CSD-760E 4x ATAPI int kit (150KB/sec Tran)....99
CSD-760S 4x SCSI-2 int kit (150KB/sec Tran)..225
PRD-150 Discman 2x port. kit.....332
PRD-155SB Discman w/16-bit Sound.559
Spressa - CSP920S Rec. CD int. 933
Spressa -CSP9211S Rec. CD ext. 1159

TOSHIBA
Toshiba XM3701BS SCSI int.....265
Toshiba TXM3701D1 6.7X ext.....329
Toshiba XM5302B 4X w/ATAPI Int.....203

REMOVABLE STORAGE

IOMega Ditto 800 800MB parallel.....145
IOMega Ditto 3200 3.2G int. Travan..285
IOMega Ditto 3200 3.2G Parallel.....289
IOMega Zip Drive - IN STOCK - 199
IOMega Jaz 1.GB int. 499
Panasonic LF 7304 1.5GB int.....2129
Pinnacle Micro Tahoe 230M int. kit...799
Pinnacle Micro Sierra 1.3GB PC int..1899
Syquest EZ135 Int. 185
Syquest 200MB Value kit Int.....599

HARD & FLOPPY DRIVES

Fireball 1280 1.28G FATA.....245
Maxtor 71626AP 1.6G EIDE.....279
Microsolutions Par. Port Floppy.....155
Microsolutions Backpack 1.2G Par....439
Quentum Bigfoot 1.28G FATA.....245
Quantum QM34300 4.2GB SCSI.....999
Seagate ST5108A 1GB ATA 225 ...219
Seegate ST3630A 630M ATA 189
Sony 1.44MB 3.5" Floppy.....49
Teac FD505 Dual Floppy.....95

CONNER
CFS850A 850M IDE 204
CFS1275A 1.2GB IDE.....235
CFP1080S 1.08GB SCSI 279

MICROPOLIS
4221 2.1GB SCSI 652
1991W 9.09 Wide 2199

WESTERN DIGITAL
AC2635 635M IDE 185
AC31600 1.6GB EIDE 295

TOSHIBA Portege 610CT

Powerful TFT color & long Lithium Ion battery technology!

- Pentium® 90MHz Processor
- 9.5" Active 16.7M Color Display
- 8MB EDO RAM, exp.to 40MB
- 686MB HDD
- Up to 5 hrs. Lithium Ion Battery
- Integrated 16-bit Sound Blaster Pro compatible sound system
- Optional Port Replicator
- VL local-bus video
- PC Card Slots, 2 Type II or 1 Type III
- AccuPoint pointing device
- Weighs just 4.8 lbs.
- Windows® 95 or Windows® for Workgroups

LIGHTWEIGHT

Lease for as low as $189 a month

intel inside

SATELLITE SERIES
T100CS Pentium 75MHz 504M 8M 10.4" Active Color, Integrated AC Adapter..1935
T2130CS DX4/75 500M 8M 10.4" Dual Scan 1545
T2130CT DX4/75 500M 8M 10.4" Active Color 2069

SATELLITE PRO SERIES
T410CS Pentium-90 810M 8M 10.4" Dual Scan (optional 4xCD).....3109
T410CDT Pentium-90 810M 8M 4xCD11.3" Active Color 4289

PORTEGE SERIES
T610CT Pentium-90 720M 8M 9.5" Active Color.....3849

NEW!! TECRA SERIES
TECRA 700 CS Pentium-120 1.13G 8M 11.3" Dual Scan .....Price Drop!
TECRA 700 CT Pentium-120 1.13G 16M 11.3" Actv Clr (PICTURED ABOVE) ..Price Drop!
TECRA 720CDT Pentium 133 1.2G 16M 6xCD 12.1 Active Color 7275

THE BIGGEST DISPLAY YOU'LL FIND!! IBM ThinkPad 760CD

- Intel Pentium 90MHz Processor
- Active Color, 12.1" Display
- 8M RAM, 1M VRAM
- 1.2GB Hard Drive
- Quad-speed CD-ROM Drive
- 3.1-9.0-hr. Li-ion Battery (dual support)
- Advanced TrackPoint III pointing device
- PCMCIA, Type I/II or one Type III
- Video Capture & MPEG 2 Playback
- 28.8 Data/Fax Modem w/voice-over
- 16-bit Stereo Wavetable Audio with Sound Blaster Support, mic and volume control

Choose your operating systems - Windows '95, Windows 3.11 or OS/2 Warp Preloaded personal productivity software.

Lease for as low as $239 a month

Technical Excellence Award Winner! PC Magazine 12/95

12.1" ACTIVE COLOR

ThinkPad Series (partial listings)
ThinkPad 755CV DX4/100 540M 8M 10.4" Active Color 3899
ThinkPad 755CX P-75 540M 8M 10.4" Active Color.....3669
ThinkPad 760C P-120 720M 8M 12.1" TFT Color.....5565
ThinkPad 760CD P-90 1.2G 8M 4xCD 12.1" Active Color (PICTURED ABOVE)...6499
ThinkPad 755CDV P-75 1.2G 2xCD 8M 10.4" Active Color 5663
ThinkPed 760L P-90 810M 8M 10.4" Active Color.....NEW!! 4150
ThinkPad 760LD P-90 810M 8M 10.4" Active Color.....NEW!!.....4485

THINKPAD Accessories
Port Replicator for 360,750 & 755 Series.....110
Car Battery Adapter for 720,755, 750 & 355 Series.....120
Worldwide AC Adapter (50W) for 750,755 & 355 Series 139
Lithium Ion Battery II for 755 Series.....269

Call for other ThinkPad models, docking stations and other accessories!

Policy Information

• Personal and company checks will delay orders 2-weeks • No surcharge for credit cards • All prices subject to change • Orders outside the USA require payment by wire transfer or American Express credit card • We check for stolen credit cards • All returns for credit, repair or exchange must have a return authorization number issued by our customer service department • All returned merchandise must in good condition and shipped to our main warehouse located at: 180 Lexington Drive, Buffalo Grove, IL 60089

Easy Payment Methods!

• *Leasing Available* • *Purchase orders accepted from educational institutions, federal & state agencies and approved corporations.* • *C.O.D's welcome.*

DHL FedEx

FAST SHIPPING, NO PROBLEM! WE DELIVER WHEN YOU NEED IT.

COMPUTER SOURCE!

✔ Top Name Brands ✔ Quality Products ✔ Comprehensive Technical Support

NETWORKING

3Com
3C503 Etherlink II 16-bit coax or 10BT 155
3C509B Etherlink III ISA coax 109
3C509B Etherlink III ISA coax. (5-pack).....485
3C509BTP Etherlink III ISA 10BT 102
3C509BTPO Etherlink III ISA 10BT (5-pack) .419
3C509BTP Etherlink III 20 or 60-packs SAVE $$
3C509B Combo Etherlink III ISA coax & 10BT .119
3C509B Combo 5, 20 & 60-packs. .....SAVE $$
3C579 Etherlink III EISA coax or 10BT ..226
3C590TPO Etherlink III PCI 10BT.....122
3C595TX Fast Etherlink PCI 10/100BT..159
3C16180 Linkbuilder 8-Port Hub 189
3C16170 Linkbuilder 12-port Hub ...318

ARTISOFT
Lantastic Ugrade V1.0 Win 95 CD.....75
Lantastic V1.0 WIN 95 CD 89
Lantastic V1.0 Win 95 Starter Kit 259
Lantastic V6.0 1-user/5-user.....79/319
Lantastic V6.0 Network Starter Kit....219
Noderunner/SI 2000 coax /10BT ...78/72

Digi
ALL MODELS IN STOCK.....CALL TODAY!

intel
EtherExpress 16C combo 118
EtherExpress Pro 10+ combo 114
EtherExpress Pro 10/100 PCI 215
EtherExpress Flash 32 EISA combo.....215
EtherExpress Pro 10 Combo 5Pk.....472
Netport Express Ethernet.....375
TokenExpress Pro.....245

LINKSYS
Combo PCMCIA Ethernet Card 129
Combo Ethernet Adapt 6-pack.....259
Combo Ether 16 LAN Card 45
10BT 16-Port Hub 275
100B-TX 12-Port Hub.....1119

LITEON
LiteLink 10 ISA PnP, 10B-T 10B-2.....45
LiteLink 10D PCI Ethernet Adapter.....65
LiteLink 10 PCMCIA Adapter 115
LiteSpeed 100D PCI Ethernet Adapter ..119
LiteSpeed 100BT Eternet 12-Port Hub...998

MICRODYNE
NE2000+ 10BT/COAX 75/75
NE2000+..20 and 100-packs .....SAVE BIG $$
NE4200 PCMCIA 10BT or COAX.....157

PACIFIC DATA PRODUCTS
DirectNet 10BT Print Server for HP LaserJet 4...279
DirectNet EX external print server.....315

SMC
Arcnet PC130 / PC270E.....72/98
Arcnet PC600 Workstation 119
Arcnet Hubs 8-port active 225
Elite16C Ultra Ethernet COMBO coax & 10BT 102
Elite16 Ultra Ethernet..6, 24 and 50-packs ...SAVE $$
Ethercard+ Elite 16-bit coax & 10BT.....115
Etherpower 10/100 PCI 10BT.....139
Tigerhub TP6 10BT Hub (6-port).....162

THOMAS-CONRAD CORPORATION by COMPAO
TC3045-CX 100mbps ISA coax 439
TC3045-UTP 100mbps ISA UTP RJ45 325
TC3047-UTP 100mbps EISA UTP RJ45....385
TC4141 Token Ring 16/4mbs PCMCIA 345
TC5048-T Ethernet PCI 10BT 123
TC5143-T Ethernet ISA 10BT 71

TRENDWARE
TE-16 XP/T 16-bit XPress RJ45 ISA.....42
TE-16XP/CT 16-bit Xpress Combo ISA 45
TE-16PnP Plug-n-Pley Combo ISA.....57
TE-200CT PCMCIA II Combo RJ45.....119

Xircom
Creditcard IIPS Ethernet 10BT.....132
Creditcard IIPS Ethernet COMBO 10BT & coax...178
Creditcard IIPS Ethernet token ring.....375
Creditcard Ethernet 10BT & 14.4 Modem ..317
Pocket Ethernet III.....Coax or 10BT.....259
Pocket Ethernet Print Server..Coax or 10BT .245
Pocket Token Ring III 449

NOVELL
NetWare 3.12 5-user.....549
NetWare 3.12 10-user.....1209
NetWare 3.12 25-user.....1709
NetWare 3.12 50-user.....2169
NetWare 3.12 100-user.....3179
NetWare 3.12 250-user.....4679
NetWare 4.1 5-user.....549
NetWare 4.1 10-user.....1279
NetWare 4.1 25-user.....1869
NetWare 4.1 50-user.....2229
NetWare 4.1 100-user.....3379
NetWare 4.1 250-user.....LOW
NetWare 4.1 500-user.....PRICE
NetWare 4.1 1000-user.....LEADER!
NetWare Telephony 5-250 users .....CALL
NetWare Web Server 679

FREE SHIPPING WITH ALL NETWARE UPGRADES!

MULTIMEDIA

"My favorite vendor for multimedia components..."
COMPUTER SHOPPER SMART SHOPPER August 1995

MULTIMEDIA KITS
Reveal Quad K4X20 299
Turtle Beach 4X Kit - sound, +50 titles ...179
Turtle Beach 8X Kit - sound, +50 titles ...379

CREATIVE
Value CD 4X PnP 229
Blaster CD 4X/6X/8X 120/185/237
Discovery CD 16 4X Int. PnP.....275
Discovery 8X 349
Performance 6X/8X 379/399

DIAMOND
Diamond 4400 282
Diamond Ultra 8000 8x.....459

VIDEO CAPTURE
AITech Pro PC TV Plus.....145
AITech Wavewatcher/TV2.....339
ATI Video Basic 179
Intel Smart VideoPro 398
PictureTel Live PCS50 w/headset ISA .2499
TrueVision 2000 Series .....CALL
TrueVision Targa+ 16 1069
Sigma Reel Magic VGA MPEG 349

ADS Advanced Digital Systems
Remote Mouse Plus (Wireless).....73
TV Elite ext. w/FREE Wireless Mouse ..198
TV Superscan 2.....299

CREATIVE
PhoneBlaster 14.4 int. S/R FAX E-mail ...175
Sharevision PC3000 w/ video.....899
VideoBlaster SE100 full motion/still video ...229
VideoBlaster MP400 full screen/full motion.285

DIGITAL CAMERAS
Kodak DC40.....699
Kodak DC50.....999
Chinon ESC-3000 829
Quicktake 150 689

PC SPEAKERS
Panasonic EAB401P 45
NEC Audio Tower.....89
LabTec 3210 20-watt.....89
Advent AV622.....188
Reveal RS5480 160-watt w/subwoof 279

ALTEC LANSING
ACS53 System w/subwoofer.....119
ACS300.1 System 195
ACS500 5-Channel Dolby Surround.299

SONY
SRS-PC50 5-watt 86
SRS-300D 10-watt w/15-watt subwoof ..174
SRS-D2KPC 20-watt w/subwoofer .135
SRS-D4KPC 30-watt w/subwoofer .199

YAMAHA
YST-M10H 10-watt.....75
YST-SS510 31-watt w/subwoofer...175
YST-SS1010 45-watt w/sub 199

SOUND BOARDS
Reveal SoundFX Wave.....119
Reveal WavExtreme 32 PnP ATAPI ..119
Roland Sound Canvas SCMI5AT.....343

CREATIVE
Sound Blaster Value Edition 55
Sound Blaster MIDI Kit.....64
Sound Blaster 16 Value IDE 89
Sound Blaster 32 IDE PnP.....149
Sound Blaster 32 AWE PnP 219
Wave Blaster II Daughter Brd w/Game Pk..118

MediaTriX
medieTrix AudioTrix-Pro 219

Turtle Beach
Audio Advantage PCMCIA 122
Wavetable 32 135
Turtle Beach Tropez + ...232

Wavjammer
Wavjammer 16-bit PCMCIA.....209
Multimedia Combo SCSI.....409

PERIPHERALS

CONTROLLERS
Boca IDE 2-HDD, 2-FDD IDE002... 29
DTC 2177 VLB EIDE Caching Kit.....59

AdvanSys
AdvanSys ABP-542 SCSI-2 ISA PnP 135
AdvanSys ABP-940 SCSI-2 PCI PnP 160
AdvanSys ABP-842 SCSI-2 VLP PnP.....169

adaptec
AHA-1522A Single SCSI-2 ISA 75
AHA-1542 SCSI-2 ISA w/Flop.....199
AHA-2842 SCSI-2 VLB w/Flop 229
AHA-2742 SCSI-2 EISA w/Flop.....295
AHA-2940 PCI SCSI Mester.....249
AHA-2940UW Ultra PCI 284

CPU UPGRADES
Cyrix
386 to 486 CPU Upgrades and Math Chips ...CALL

intel
Overdrive for 486 25Mhz to DX4/75 135
Overdrive for 486 33Mhz to DX4/100.....175
Overdrive for 486 to Pentium 63MHz 178
Overdrive for 486 to Pentium 83MHz 257
Overdrive P-120/P-133/P-150/P-166 .....CALL

TAPE BACKUPS
Conner Tapestor 420 / Tapestor 850 .152/215
Conner Tapestor Travan 800 internal 149

COLORADO MEMORY SYSTEMS INC.
Jumbo 350/1400 .....107/225
Trakker 350.....155
Powertape 1GB/ 2GB / 4GB int 639/937/1195

SCANNERS
AGFA Arcus II 1849
LARGE FORMAT SCANNERS
Calcomp ScanPlus III E-Size 36x72 .....CALL
Umax Mirage D-16L B-size w/ Trans Adapter.6895

ARTEC
ViewScan Greyscale Handheld 400dpi.....49
ViewScan A2000D Color Handheld 600dpi.....119
ViewStation AT3 24-Bit Color, 1-Pass 2400dpi...349

HEWLETT PACKARD
ScanJet 4S / ScanJet 4C 299/935

MICROTEK
PageWiz..Compact 300dpi, Parallel 188
ScanMaker E3 w/Imagestar NEW!! 24-bit Color...369
ScanMaker E6 Series.....558

Nikon
Cool Scan LS-10 PC int./ext. 1169/1299
Cool Scan LS-20.....NEW!! .....CALL
Scantouch AX-1200 flatbed...2400 dpi 1227

Polaroid
Sprint Scan 35 .....FILM SCANNER 1549

UMAX
Scanthis Handheld Scanner.....CALL
PageOffice 289
Vista S6E 600dpi w/SOHO Bundle 399
Vista S6 600dpi w/Photoshop LE, OCR.....546
Vista S12 600X1200dpi, w/Photoshop LE ..775
Powerlook Pro 2400dpi w/Phtshp , KAIS & Trans. ...1869
Powerlook II w/Transparency Adapter .....CALL
Mirage D-16L B-size w/ Trans Adapter.....6895

PLOTTERS
Calcomp Designmate 3024M 1599
HEWLETT PACKARD ..... ALL MODELS
Hewlett Peckard DesignJet 230 D-size 1999
Summagraphics.....ALL MODELS AVAILABLE

DIGITIZERS
Calcomp Drawing Slate 12x12 16btn 209
Kurta 6x8 XGT w/interface.....249
Summesketch III 12x12 eny cursor 239
Wacom Artpad II 4x5 w/ Dabbler 149
Wacom Artz II 12x12 Cordless 409
Wacom ArtZ 6x8 Cordless 299

VIDEO BOARDS
Hercules Stingray Pro 1MB PCI or VLB 87
Hercules Terminator 64 2M8 VLB/PCI 145
Hercules Dynamite Power 2M VLB.....146
Matrox Millennium 3D PCI 2M 309
Matrox Millennium 3D PCI 4M 439
Number 9 9FX Motion 771 PCI or VLB 2M VRAM ...289
Number 9 9FX Motion 771 PCI or VLB 4M VRAM ...439

ATI
Graphics XPression VLB/PCI/ISA..1MB/2MB .139/179
Graphics Pro Turbo 2M8 PCI 312
Graphics Pro Turbo 2M / 4M (VLB) 203/359
WinTurbo 2M VLB/PCI/ISA.....275
XClaim PCI 2M or 4M.....348/464

DIAMOND
Speedstar 64 2120XL/2200XL.....145/199
Stealth 64 Video 3240XL VRAM 2M.....335
Edge 3D 2120XL PCI.....237
Stealth 64 Video 3200 PCI 2M 254
Viper Pro PCI 4M w/Corel.....520

MODEMS
CISCO SYSTEMS .....Call for listings!
Boca Express 14.4 w/Fax int. w/software.....79
Boca 14 4 Multimedia Voice w/voice view.....102
Boca 28.8 V.34 int./ext/ 157/205
Microcom TravelCard & Deskporte all models ....CALL
Multitech 1932ZDX 19.2 w/fax ext. 117
Multitech MT2834ZPX 28.8 int.....172
Practical PM144MT 14.4 Mini-Tower ext. 86
Practical V.34 PCMCIA EZPort 269
Prometheus Pro Voice Fax/Modem 14.4 ...59
Simple 14.4 Voice Data/FAX Modem.....109
Telebit FastBiazer & NetBlazer series .....CALL
Zoom 14.4 w/Fax int./ext. 65/93

Hayes
Accura 28.8 w/fax int. / ext. V.34 .....167/189
Optima 28.8 w/fax int. / ext. w/voice ..360/418
Optima 28.8 EZJack PCMCIA 279

Megahertz
XJII44 xJack 14.4 PCMCIA 93
XJ2288 xJack 28.8 PCMCIA V.34.....279
EM1144T 14.4 PCMCIA 10BT Combo ..245
XJack 28.8 Cellular w/XJack.....305

USRobotics
Sportster 28.8 Winmodem Internal 139
Sportster Voice 28.8 Fexmodem Int.....147
Sportster 14.4 w/fax int./ext. .....91 / 107
Sportster 28.8 V.34 int./ext. 179/159
Sportster PCMCIA 2.1 14.4 w/fax.....95
Sportster PCMCIA 2.1 28.8 w/fax V.34 ..275
Sportster ISDN 128K.....379

SOFTWARE

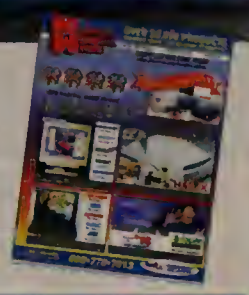
1000's of Titles In Stock!

Adobe
Adobe Illustrator 4.1 w/Streamline ...320
Adobe Photoshop 3.0.5.....549
Adobe Pagemaker 6.0.....569
Borland dBase III Plus 459
Borland Paradox 7.0.....279
Caere Pagekeeper 2.0 85
Caere OmniPage Direct 2.0 59
Caere OmniPage Pro 6.0 474
Calera WordScan Plus 4.0 368
Corel SCSI 2.0 82
Corel DRAW! 5.0 CD 425
Corel CD Office Compenion..New 95
CA BPI Accounting II 4.0 dos.....167
CA Clipper V5.3.....149
DesignCAD 2D / 3D 162/242
Fractel Painter 4.0/Dabbler 2.0 ...337/42
Lotus 1-2-3 5.0 299
MacroMedia Director 4.0 829
Macromedia Freehand 5.5 379
Macromedia Extreme 3D CD 315
PerfectOffice/Upgrade 419/242
Perfect Office Pro 3.0 535
QuarkXPress 3.32 595
Symantec Act 2.0.....169
WordPerfect 6.1 /Upgrade 191/250
WordPerfect Quattro Pro 6.0.....250

SYMANTEC.
ACT 2.0 $169

TOP TITLES FOR WIN 95
1. Microsoft Windows 95 Upgrde CD....95
2. Softram.....34
3. Microsoft Plus (Win 95 Companion) 45
4. Microsoft WordPerfect Upgrade 89
5. Norton Antivirus 72
6. Netscape Navigator Personal 39
7. McAfree Viruscan.....42
8. Microhelp Uninstaller 39
9. CleanSweep 27
10. Microsoft Upgrade Office Pro CD .327
11. Quarterdec MagnaRam 2 239

CALL FOR A FREE CATALOG!



POWER PROTECTION

YOUR APC HEADQUARTERS!

APC AMERICAN POWER CONVERSION

$25,000 Lifetime Equipment Protection on All UPS!

Protect ME! APC

THE WORLD'S ONLY PLUG-AND-PLAY UPS!

BACK-UPS PRO PnP SERIES
APC Introduces the world's ONLY Plug-and-Play UPS with PowerChute Win 95 Management Software!
Back-UPS Pro 280/420.....143/237
Beck-UPS Pro 650.....289

BACK-UPS SERIES
The World's Best Value in Power Protection!
Beck-UPS 280B/400B.....99/145
Back-UPS 450/600.....169/237
Beck-UPS 900/1250.....328/432

SMART-UPS VS SERIES
Includes PowerChute Power Management & Diagnostic Software for networks!
Smart-UPS 420 VS/650 VS 259/295
Smart-UPS 1000 VS/1400 VS 435/559

Microsoft Solution Provider — Protect Your Investment!

SMART-UPS SERIES
Performance Power Management for Advanced Business Networks!
Smart-UPS 450/700 .....275/338
Smart-UPS 1400/2200 .....594/1029
Smart-UPS 2000XL.....1180

SURGE SUPPRESSORS
Protect Net Network Cable Protector 23
Personal SurgeArrest Strip 6', 7-outlets...19
Personal SurgeArrest 6', w/RJ11 25
Personal SurgeArrest 6', w/CATV 34

UPS MANAGEMENT SOFTWARE
PowerChute+ for Novell/Unix 69/99
PowerChute+ for Win/Win NT 59/69

MAGNAVOX
CM4018 17" Super EVGA Color Display
- 17" CRT,1280x1024 Res.
- Dot Pitch 0.28mm
- Tilt/Swivel Base & Interface Cable included
- Built-in power management

$595

USRobotics The Intelligent Choice in Data Communications
Sportster Winmodem™ Internal 28.8
Faxmodem for Windows
- Max. throughput 115,200 bps
- High speed data: 28.8 Kbps (Upgradable to 33.6)
- Free fax & data software
- Internet Connection Kit
- High speed fax: V.17 Group III 14,4000 and 9600 bps Class 1 & Class 2.0 send and receive fax

5-Year Warranty! $139

FREE UPGRADE TO 33.6 Kbps!

UMAX
Shown above with optional automatic document feeder & transparency adapter
Vista S6E Soho Scanner
4800dpi Software Interpolated!
- 300x600dpi Optical Resolution
- 4800dpi Maximum Resolution
- 1-Pass Scanning, SCSI Card Included
- 16.8 Million Colors, 24-bit
- Software: ImageFolio LE, Wordlinx OCR

$399

MIDWEST COMPUTER WORKS
180 Lexington Drive, Buffalo Grove, IL 60089

NATIONAL DIRECT ORDER LINE
VISIT US ON THE WEB! http://www.mcworks.com

1-800-65-WORKS

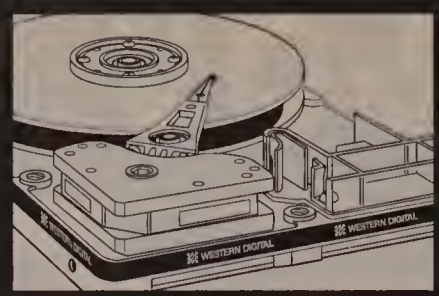
FAX 847-459-6933
Customer Service 847-459-9410
(1-800-659-6757)

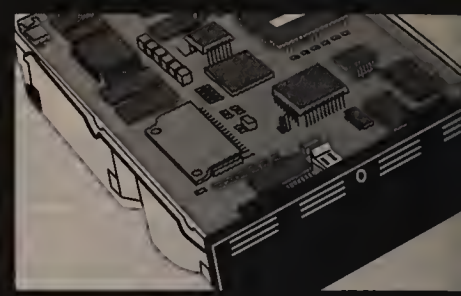
PC WORLD JUNE '95

Circle 155 on reader service card

MEGAHAUS
The Drive Authority!

Visit us on the Internet at
http://www.megahaus.com





UNEQUALED REPUTATION
Nobody knows drives like MegaHaus. We have specialized in storage solutions for over 8 years. Repeat business from satisfied customers is the backbone of our business. We satisfy our customers.

DIRECT REPLACEMENT WARRANTY
During the first year of your warranty, we replace: not repair, any defective items. All items receive lifetime technical support from our factory trained techs.

SAME DAY SHIPPING
Our multi-million dollar inventory offers you the best diversity and availability in the market. We ship most orders the same day. Each order is checked at least four times for accuracy.

FAST, EASY INSTALLATION
Anyone can sell a hard drive to you. We sell easy to install storage solutions. We spend countless hours researching the best solutions, then create our quick precise installation guides for each kit.

UNBEATABLE DEALS

RECORDABLE CD ROM
- Complete kits include everything you need to start creating your own data and audio CDs.
- Perfect for data archive, backup, and exchange.
- High quality name brand drive mechanism.
- PC kits include CD mastering software, compatible with Windows 3.1 and Windows 95.
- Mac/Power Mac kits include CD mastering software.

2X Recorder 4X Reader		4X Recorder 4X Reader	
PC Int w/ controller, software, and 5 disks	$849	PC Int w/ controller, software, and 5 disks	$1219
PC Ext w/controller, software, and 5 disks	$949	PC Ext w/controller, software, and 5 disks	$1319
Mac External with software, and 5 disks	$899	Mac External with software, and 5 disks	$1269

HARD DRIVE SPECIALS

IDE

1090MB	11ms	4500rpm	Fujitsu	$195
1080MB	11ms	5400rpm	Seagate	$209
1625MB	10.5ms	5400rpm	Seagate	$285
2167MB	10.5ms	5400rpm	Seagate	$309
2559MB	11ms	5200rpm	Western Digital	$399

Add a GSI -21 controller & cable for $45

SCSI

2147MB	9ms	5400rpm	Micropolis	$499
2147MB	8ms	7200rpm	Seagate	$675
4290MB	8ms	7200rpm	Seagate	$999
9100MB	12ms	5400rpm	Micropolis	$1919

Add an Adaptec PCI 2940Kit for $239

EXABYTE TAPE BACKUP
ExaByte's 8mm EXB-8700 Tape Drive features 7 Gig capacity native and 14 Gig capacity compressed. Blazing fast 60 Megs-per-minute backup rate! **$1799**

Complete backup kit includes external drive with controller, cable, 1 tape, 1 cleaning tape, and a CD ROM w/ Arcada backup software for DOS/Win.

100MB ZIP
Ext SCSI & 1 disk	$199
Parallel Ext & 1 disk	$199

1 Gig JAZ
Int SCSI & 1 disk	$499
Ext SCSI & 1 disk	$599

Adaptec SCSI controller [A1505CDKIT] only $49 when purchased with Zip or Jaz.

HARD DRIVES

CONNER

IDE			
850MB	14ms	CFS850A	$210
1081MB	14ms	CFS1081A	$225
1620MB	14ms	CFS1621A	$285
SCSI			
2147MB	8.5ms	CFP2105S	$609
2147MB	9ms	CFP2107S	$645
4294MB	9ms	CFP4207S	$935

MICROPOLIS
Micropolis low price guarantee!

SCSI			
2050MB	8.5ms	MC4221	$609
2147MB	9ms	MC4421	$499
4294MB	8ms	MC3243	$929
9100MB	12ms	MC1991	$1919
SCSI-AV Audio / Visual tuned drives			
2000MB	8.5ms	MC4221AV	$685
4294MB	8ms	MC3243AV	$1025
9100MB	12ms	MC1991AV	$2029
WIDE SCSI			
2050MB	8.5ms	MC4221W	$739
4294MB	8ms	MC3243W	$1029
9100MB	12ms	MC1991W	$1939
WIDE-AV Audio / Visual tuned drives			
2000MB	8.5ms	MC4221WAV	$775
4294MB	8ms	MC3243WAV	$1099
9100MB	12ms	MC1991WAV	$2019

Seagate

IDE			
631MB	14ms	ST3630A	$179
1080MB	11ms	ST51080A	$209
1270MB	12ms	ST31270A	$219
1625MB	10ms	ST31640A	$285
2167MB	10ms	ST32140A	$309
SCSI			
1052MB	9ms	ST31231N	$349
1080MB	12.5ms	ST51080N	$239
2147MB	9ms	ST32151N	$619
2147MB	8ms	ST32550N	$675
4290MB	9ms	ST15230N	$905
4290MB	8ms	ST15150N	$999
9080MB	11ms	ST410800N	$1969
WIDE SCSI			
2147MB	8ms	ST32550W	$749
4290MB	8ms	ST15150W	$1099
9080MB	11ms	ST410800W	$2069

HARD DRIVES

Quantum

IDE			
850MB	14ms	TB850A	$195
1250MB	15ms	BF1250A	$215
1280MB	12ms	FB1280A	$229
1700MB	11ms	SR31700a	$255
2550MB	15ms	BF2500A	$349
2550MB	11ms	SR32550A	$369
SCSI			
850MB	14ms	TB850S	$195
1050MB	12ms	FB1080S	$259
1280MB	12ms	FB1280S	$279
2150MB	8ms	XP32150	$639
4300MB	8.6ms	XP34300	$919

WESTERN DIGITAL

IDE			
639MB	10ms	AC2635	$179
853MB	10ms	AC2850	$195
1280MB	10ms	AC31200A	$219
1624MB	9ms	AC31600	$269
2111MB	12ms	AC32100	$329
2559MB	12ms	AC32600	$399

Maxtor

IDE			
1Gig	<12ms	M71084A	$205
1.3Gig	<12ms	M71336A	$220
1.6Gig	<12ms	M71626AP	$259
2Gig	<12ms	M72004A	$299

FUJITSU

IDE			
10809MB	9.5ms	M1606T	$209
1090MB	11ms	M1614T	$199

REMOVABLE

Syquest Removable media drives w/ 1 free disk.

SCSI	135MB	200MB	270MB
Internal	n/a	$339	$339
External	$198	$399	$399

IDE 135MB	Internal / Parallel	$189/$249
IDE 270MB	Internal / Parallel	$339/$489

Genuine SyQuest Media Qty 2-4 / 5-9 / 10+ or w/drive

44MB	$53/51/49	88MB	$55/51/49
105MB	$56/54/53	135MB	$23/21/19
200MB	$80/75/72	270MB	$65/62/59

CD ROM DRIVES

SCSI				
Sanyo	SH254S	4X	190ms	$129
NEC	CDR222	4X	200ms	$129
Pioneer	DRU124X	4.4X	140ms	$179
NEC	CDR512	6X	150ms	$279
Plextor	PX63CS	6X	145ms	$325
Toshiba	XM5601B	8X	145ms	$299
IDE (ATAPI)				
Toshiba	XM5302B	4X	190ms	$79
Toshiba	XM5522B	6X	150ms	$129
Teac	CD56E	6X	110ms	$125
OEM	IDECD8X	8X	150ms	$169
NEW!	IDECD10X	10X	130ms	$289
CD ROM CHANGERS				
NEW!	3 Disk	4X	230ms	$155
Alps (ATAPI)	4 Disk	4X	210ms	$269
Pioneer	6Disc	4.4X	190ms	$319
Pioneer	18Disc	4.4X	300ms	$1899

CD ROM TOWERS

Seven drives in a single enclosure.

NEC 4X	$1489	Plextor 4.5X	$2829
NEC 6X	$2839	Toshiba 6.7X	$2549

1-21 drive models, & other mechanisms available.

TAPE DRIVES

SAVE $10 on any tape drive with hard drive purchase!

800MB	Seagate	TST800R	$167
1Gig	Seagate	TST800+	$172
1.7Gig	Seagate	TSM1700FT	$229
3.2Gig	Seagate	TST3200RFT	$279
3.2Gig	Exabyte	EXBEAGLE96T	$249
4.4Gig	Seagate	TSM1700+	$289
IDE			
2-4Gig	Seagate	TSM4000A	$379
4-8Gig	Seagate	TST8000A	New
SCSI			
2Gig	HP	C1534A	$699
2Gig	Seagate	C4320RT	$699
2-4Gig	Seagate	TSM4000	$379
2-4Gig	Seagate	C4324RP	$799
2-4Gig	HP	C1536A	$799
4-8Gig	Seagate	TSM8000	New
4-8Gig	Seagate	C4326NP	$909
4-8Gig	HP	C1533A	$949
3-7Gig	Exabyte	8205XL	$1269
7-14Gig	Exabyte	8505XL	$1889

Call for backup software, extra tapes, cleaning kits.

CONTROLLER CARDS

IDE	Alone	w/Drive
GSI 16Bit Enhanced IDE		
1533-18 2 IDE	$41	$36
1533-21 2IDE, 4 Floppy	$53	$48
1533-32 2IDE, 4 Floppy, IO	$100	$95
TEKRAM		
DC280E, 4 drive Enhanced VESA, 2 16550 serial ports, 1 EPP parallel port, 1 game port	$40	$35

SCSI

ADAPTEC (Save $10 with Hard Drive purchase)

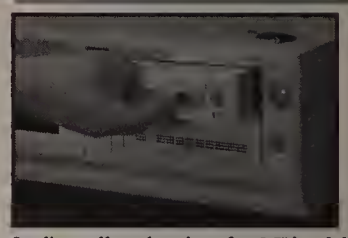
ISA A1505 Kit (no hard drive suport)	$60
ISA A1515 Kit	$97
ISA A1530 Kit	$175
ISA A1522 Kit	$155
ISA A1542 Bare / Kit	$210 / $270
EISA A2742 Kit / Wide kit	$379 / $409
VESA A2842 Kit	$255
PCI A2940 Kit /Ultra Wide kit	$239 / $269

We stock all Adaptec controllers made.

OPTICAL DRIVES

Fujitsu 230MB Parallel external (others available)	$439
HP 2.6 Gig with 1 disk	$2209
Maxoptix 2.6Gig	$2019

DRIVE HARDWARE



High Quality pull out brackets for 3.5" hard drives. Mounts in 5 1/4" bay. Entire frame is metal, gold connectors rated at 50K insertions, built in cooling fan. SCSI unit has ID select on cartridge. Great for security, RAID, or Backup. Hot swapable!

SCSI 1 $85 2-9 $82 10+ or w/ drive $79
IDE 1 $79 2-9 $76 10+ or w/ drive $73
WIDE 1 $129 2-9 $126 10+ or w/drive $123

MEGAHAUS
HARD DRIVES
2201 Pine Drive
Dickinson, Texas 77539

1-800-786-1154

June, 1996 PC World Sales Hours (Central Standard Time)
8am - 8pm Monday thru Friday 9am - 3pm Saturday
FAX (713) 534-6580 Local (713) 534-3919
T.T.Y.(Deaf) 800-473-0972 Corporate / Government 800-786-1146
We sell within the United States, its territories, and Canada (sorry no international orders)

Circle 147 on reader service card

VISA MasterCard DISCOVER AMERICAN EXPRESS

NO SURCHARGE
We accept Fortune 500 & Government bids & PO's.
We check for COD and Credit Card fraud!

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defaced items may not be returnable. No refunds on software or special orders (items not listed in ad.) All refunds subject to 15% restocking fee. Some exceptions may apply to unbeatable deals. All trademarks are registered trademarks of their respective companies. Personal checks held for clearance. We reserve the right to refuse any sale for any reason. ©1995 MegaHaus Inc.

WE WILL TRY TO MATCH OR BEAT ANY ADVERTISED PRICE, CALL FOR LATEST PRICING!!

WE ACCEPT PO'S FROM QUALIFIED FIRMS

30 DAY MONEY BACK GUARANTEE

M E M O R Y

LIFETIME WARRANTY

SECURITY WILL CALL WINDOW NOW OPEN! NO SURCHARGE FOR MC, VISA AE & DISCOVER

HOT BOX SPECIALS

★ LIMITED QUANTITIES ★

Thinkpad 750, 720, 700, 4Meg..................$ 99.00
Zeos Meridian Notebook, 16Meg..................379.00
HP 5000/Twinhead Slimnote 8 Series, 16Meg .419.00
Winbook, 8Meg..................89.00
Compaq LTE LITE, 4Meg..................89.00
HP 5L, 4Meg..................89.00
256 x 3-80, 30 Pin..................5.00
256 x 3-70, 30 Pin..................6.00
1 x 3-70..................19.00
512 x 36-80, 2Meg, 72 Pin..................30.00
IBM 6450603, 1Meg..................19.00
IBM 6450604, 2Meg..................29.00
NEC Versa, 32Meg..................519.00

CACHE MEMORY

	12NS	15NS	20NS	25NS
8Kx8	–	8 50	6 00	5 50
32Kx8	14 00	9 00	8 00	7 00
32Kx8 (3 3V)	–	14 00	9 50	–
64Kx1	–	11 00	9 00	8 00
64Kx4	–	11 00	9 00	8 00
64Kx8	–	15.00 (5V)	19 00 (3 3V)	–
16Kx4	–	8 00	7.00	8 00
128Kx8	–	29.50	26.00	24 00
32x8 SOJ	–	12.00	11 00	9 00

Call for SOJ Version

CACHE MODULES

256K (160 pin) Pipeline Burst Cache Module $39.00

512K (160 pin) Pipeline Burst Cache Module $69.00

256K (160 pin) Async Cache Module compatible with IBM Aptiva $39.00

Individual D-RAM Chips

MEMORY FOR IBM & APPLE

	50NS	60NS	70NS	80NS	100NS
1Megx1	–	6 65	6 45	5.95	4 95
1Megx4	–	49 00	39.00	38 00	–
1Megx4 (Zip Pk)	–	24 00	22 00	21 00	–
256x4(Page Dip)	–	7.25	6.75	6 50	5 95
256 4(Static Dip)	–	–	9 95	–	–
256x4(Page Zip)	–	9 25	9.00	8 95	–
256x4(Video Zip)	–	–	12 95	11 95	9 95
256x8(SOJ)	–	19 00	18 00	–	–
256 x1	–	3.25	2.95	2 75	2.25
64x4	–	–	–	3.75	–
64x1	–	–	–	–	2.00
256x18 SOJ	–	39.00	29.00	–	–
256x16 SOJ Edo	–	39 00	–	–	–
256x16 Video Zip	–	49 00	39.00	–	–

INTEL Math Chips

80287-XL	49.00
80387-16 DX	39.00
80387-20 DX	44.00
80387-DX (Does All)	49.00
80487-SX (Does All)	199.00
Intel SX (Does All)	49.00
Intel SL Mobil	39 00
Intel 16SX	29.00
Intel 20SX	29 00

Lowest price on Intel overdrive chips

CYRIX DRx² 386 to 486 Upgrade

Clock Doubler

CX486 DRx²-25/50......199.00 CX486 DRx²-33/66......199.00 CX486 SRx² 25/50......189.00

SIMM MODULES (Add $5.00 for SIPP)

	40NS	50NS	60NS	70NS	80NS	100NS
256 x 9	–	–	–	10.00	9.00	8.00
1Meg x 9 (3 chip)	–	–	35.00	32.00	30.00	–
1Meg x 9 (9 chip)	–	–	34.00	32.00	23.00	22.00
4Meg x 9	–	–	124.00	119.00	105.00	–
16Meg x 9 (9 chip)	–	–	–	459.00	–	–

72 PIN SIMMS (EISA), EDO

	80NS	70NS	60NS
256 x 36 1 mg	39 00	39 00	39 00
512 x 36 2 mg	74 00	89.00	89 00
1 meg x 36 4 mg	114 00	109 00	109.00
2 x 36 8 mg	219 00	214 00	213 00
4 x 36 16 mg	449.00	419 00	419.00
8 x 36 32 mg	929 00	909.00	909.00
16 x 36 64 mg	1969 00	1949.00	–
1 x 32 4 mg	89 00	88.00	88.00
2 x 32 8 mg	184 00	177.00	177.00
4 x 32 16 mg	344.00	334.00	334.00
8 x 32 32 mg	719 00	899.00	699.00
1 x 32 4 mg EDO	99 00	97.00	97.00
2 x 32 8 mg EDO	194 00	189.00	–
4 x 32 16 mg EDO	419.00	409.00	409.00
8 x 32 32 mg EDO	909.00	699.00	899.00

DIMMS (168 pin, 64 bit)

1 x 64	4Meg	119.00
1 x 64	8Meg	169.00
2 x 64	16Meg	287.00
4 x 64	32Meg	569.00
8 x 64	64Meg	1324.00
16x64	128Meg	Call

SO DIMMS (72 pin)

4Meg	139.00
8Meg	289.00
16Meg	549.00

CYRIX FASMATH PROCESSOR

Programs executed up to 3X faster • Plug & object code compat. w/Intel
83D87-40MHz – **79.00** 83D87-33MHz – **49.00** 83S87-25SX Ver. – **49.00**
83S87-33SX – **65.00** **PC Week™** rated #1 over all math chips
5 Year Warranty • "All Downward Compatible"

AST MEMORY

MODEL	AMT UPGRADED	AST PART #	PRICE
Bravo LC Series, Bravo MT, Bravo MS, MS-L, Advantage Pro DX33, SX25	4Meg	500987-002	89 00
	8Meg	500987-003	178 00
	16Meg	500987-004	334 00
	32Meg	500987-005	668.00
Premmia LX P/60, MX4/66d, 4/100T, P/60	8 Meg	500987-003	178 00
	16 Meg	501340-002	358.00
	32 Meg	500987-005	899 00
	64 Meg	501569-001	Call
Premmia 4133, 4133S, 4/50d, 4/60d	8 Meg	501159-002	218 00
Premmia SE 4/33, 4/66d, P/60	16 Meg	501159-003	369 00
Premmia MTE 4/33, 4/66d, P/60	32 Meg	501159-004	716 00
Manhattan G, V Series Server	64 Meg	501159-005	1398.00
Power Premium 3/33, 4/33, 4/33S, 4/50d, 4/66d	8Meg	500780-001	198 00
Premium 486/25, 486/25E, 486/33, 486/33E			
Premium 386/33TE, 486/25TE, 486/33TE			
Prem. II 386/25, 386/33, 486/33, 486 SX/20			
Bravo 486/25, 486/33	2 Meg Kit	500780-005	96 00
Advantage 486/25, 486/33, 486/33P, 486 SX/20			
Premium SE4/22	8Meg Kit	500780-001	198 00
Premium SE 4/50, d, 66d, P/60	1 Meg	500780-003	49 00
Prem. 386/33T, 386 SX16, Prem II 386SX 20, 386/25	4Meg	500780-004	99 00
Premmia GX P/90 P/100	8Meg Kit/16Meg Kit	501565-001/501566-001	218/342
	32Meg Kit/64Meg Kit	501567-001/501568-001	668/1398
AST Cupid Board	0-32 Meg	500818-001	159 00

AMBRA

Ambra Pentium-60	4/8/16 Meg	109/209/399
Ambra NC 425SL	2/4/6 Meg	79/129/219
Ambra N Series	***4/8/12/16 Meg***	***139/219/329/439***
Ambra SN Series	4/16 Meg	139/529
Ambra Sprinta SLC II	2/8 Meg	64/210
Ambra N-75, N-100	4/8/16	139/269/524

LAPTOP, NOTEBOOK 2.5" HARD DRIVE

2.5" IDE Internal Hard Drive — Most Notebooks Supported
810MEG 12 5mm $499 1.3MEG 19.0mm $799

We also sell Memory for: Dell, Gateway, HP, DEC, Sun, Zenith, Acer, NEC and Epson

NO SURCHARGE FOR MASTERCARD, AMEX, VISA OR DISCOVER. PURCHASE ORDERS ACCEPTED FROM FORTUNE 2000, GOVERNMENT & INSTITUTIONS. California orders add 8.25%sales tax. Returned orders or ordered wrong parts are subject to a 20% restocking fee. (Memory chips not installed in boards.) We accept international orders shipped via UPS Air. APO, FPO orders welcome. Customers are expected to pay customs and "other" charges if shipped Int'l. All credit card charges verified for fraudulent use. SORRY, NO REFUNDS AFTER 30 DAYS – EXCHANGES ONLY. If you receive defective merchandise we exchange only—no refunds. We accept MC, VISA, Discover, AE, prepaid orders, purchase orders, wire transfer, COD (cashiers check) orders, cash & cashiers checks. Orders shipped by UPS, FEDX must be signed for.
• ALL MANUFACTURER PART #'S ARE FOR REFERENCE ONLY • MINIMUM ORDER $40.00 • NO REFUNDS ON SHIPPING

IBM PS/1, PS/2 MEMORY MODULES

IBM PART NO.	WORKS WITH MODEL NO.	PRICE
30F5360 (2Meg)	30-286, 25-286, 50 MTHR BD.	91.00
6450604/92G7196 (2Meg)	70-061, E61, 121, 50Z, 555X, 65SX, P-70, 55LS, 85LS, X-Station 120 & 130, 355X, 35LS, 40SX	49 00
6450608 (2Meg)	70-A21, A-61, 8-21, 8-61, 35SX, 35LS, 40SX, Val Pt 325T	49 00
78X8955 (128K)	25	35 00
34F2933 (4Meg)	355X, 40SX, 55SX, 65SX, 55LS, 85LS	109 00
67F9977/92G7199 (4Meg)	55SX, 55LS, 85SX, 40SX, 35SX, 35LS	109 00
92F9935 (2Meg)	P/S1 8 P/S1/386SX-2121	69 00
92F9694 (4Meg)	P/S1 8 P/S1/386SX, Model-2121	119 00
92G7200 (4Meg)	PSI Expert, Consultant, Willow	109 00
4Meg/8Meg/16Meg/32Meg	***PC 300 Series***	***79/158/319/649***
4Meg/8Meg/16Meg/32Meg	***PC 700 Series***	***79/158/319/649***
4Meg/8Meg/16Meg/32Meg	***PC Power Series***	***79/158/319/649***
4Meg/8Meg/16Meg/32Meg	***PC Server 300, 325, 520***	***79/158/319/649***
8Meg/16Meg/32Meg (Ecc)	***PC Server 500***	***Call/Call/Call***
92G7539 (4Meg)	Aptiva 310, 330, 350, 510, 530, 710, 730, Pentium	79 00
92G7541 (8Meg)	Aptiva 310, 330, 350, 510, 530, 710, 730, Pentium	156 00
92G7543 (16Meg)	Aptiva 310, 330, 350, 510, 530, 710, 730, Pentium	329 00
92G7545 (32Meg)	Aptiva 310, 330, 350, 510, 530, 710, 730, Pentium	699 00
73G3131/92G7201 (4Meg)	Value Point Performance, PC Server 4/66	109 00
73G3132/92G7203 (8Meg)	Value Point Performance, PC Server 4/66	209 00
60G1622/92G7204 (16Meg)	Value Point Performance, PC Server 4/66	399 00
92G7205 (32Meg)	Value Point Performance, PC Server 4/66	699 00
6450902 (2Meg)	56, 57, 57SX, 90, 95, P-75, 57SLC Value Point 77 486DX2, 486SX, SVR 85	60.00
6450128/92G7200 (4Meg)	57SX, 90, 95, P-75, 57SLC, 56, 58SLC, P/51, 386SX, Mod-2123, 2133, 2155, Val Pt 77, 486CS2, 486SX, SVR85 Value Point 77 486DX2, 486SX, SVR 85	99 00
6450129/92G7428 (8Meg)	35SX, 405X	199 00
6450130/92G7202 (8Meg)	58, 57, 57SX, 90, 95, P-75, 57SLC Value Point 77 486DX2, 486SX, SVR 85	199 00
6451158/92G7208 (4Meg acc)	486, 95XP, 95A (install in pairs)	149 00
6451159 (8Meg ecc)	486; 95XP, 95A (install in pairs)	219 00
92G7209/32G3720 (16Meg acc)	9595 DPT	699 00
4Meg/8Meg/16Meg/32Meg	PC300 Pentium	109/171/S49/1098

IBM NOTEBOOK & LAPTOP MEMORY

07G1415/07G1420 (4Meg)	Thinkpad 750, C, 700, C, 720, C, CL57SX	149 00
07G1416/07G1421 (8Meg)	Thinkpad 750, C, 700, C, 720, C, CL57SX	289 00
66G0095 (16Meg, 32Meg)	Thinkpad 750, C	530/1043
66G0094 (4Meg)	Thinkpad 755, 360, 355, 340, 450	129 00
66G0094 (8Meg)	Thinkpad 755, 360, 355, 340, 450	249.00
66G0094 (16Meg, 32Meg)	***Thinkpad 755, 360, 355, 340, 450***	***468/976***
8189098 (4Meg)	Thinkpad 500, 510CS (3.3 volt)	129 00
8189099 (8Meg, 16Meg)	Thinkpad 500, 510CS (3.3 volt)	249/489
79F0999 (2Meg)	LX40, N33SX, PS Note	69 00
79F1000 (4Meg)	LX40, N33SX, PS Note, Tkpd 350, 350c, PS Note 425	119.00
79F1001 (8Meg)	LX40, N33SX, PS Note	219 00
Hard Drive (810 Meg, 1.3 Gig)	Thinkpad 750, 755, 360, 355	719/797
(4Meg/16Meg)	Thinkpad 755 Dimm Modules	139/549
(4Meg/16 Meg w/Adap	Thinkpad 755	198/597
60G0378 (8Meg)	Thinkpad 350, 350c, PS Note 425	279 00
60G0379 (16Meg)	Thinkpad 350, 350c, PS Note 425	499.00
92G7259 (4Meg)	Thinkpad 701C, CS, Butterfly	129.00
92G7261 (8Meg)	Thinkpad 701C, CS, Butterfly	269 00
92G7263 (16Meg, 32Meg)	Thinkpad 701C, CS, Butterfly	542 00
4Meg/8Meg/16Meg (730T only)	Thinkpad 340, 730T	139/269/524/1586
(4Meg, 8Meg, 16Meg)	Thinkpad 760	179/280/567
8Meg/16Meg	Thinkpad 820	390/729
4Meg/8Meg/16Meg/32Meg	Thinkpad 850	193/399/719/1439
Hard Drive (810Meg)	***Thinkpad 760***	***529.00***

COMPAQ MEMORY MODULES

Deskpro 386S	1Meg Module/4Meg Module	79/129
	1Meg Board/4Meg Board	99/201
Deskpro 386 25E/20E	1Meg Module/4Meg Module	79/129
	1Meg Board/ 4 Meg Board	99/201
Deskpro 386/25, 20	1Meg Module/4Meg Module	79/129
Deskpro System Pro 386/33, 486/25, 486/50L	2/8/32Meg	91/244/854
Deskpro 4/66I, 4/33I, 4/25IS, 3?33I, 3/25I	2/4/8Meg	69/109/209
Deskpro "M" Series	Expansion Board OK	119
Deskpro 450, 466, 4100, 575, 590, 5120, 5133	4/8/16/32Meg	109/199/399/699
Deskpro XE 433S, 450, 466	2/4/8Meg	69/109/209
Deskpro XE 560	8/16/32/64/128Meg	178/342/688/1398/Call
Deskpro XL450, 468, XL560, xl566, XL575, 5100 xl590	4/8/16/32/64Meg	109/209/399/699/1300
Presario 433, CDS520, CDJV520, CDL524, CDS526, CDTV528 660, CDS660, CDS720, CDS724, CDS744, CDS860 CDS920, CDTV920, 924, CDS924, CDS954	4/8/16/32Meg	89/171/334/699
Presario 400 Series, 600 Series, 800 Series	2/4/8/16/32Meg	69/109/209/399/699
Presario CDS774, CDS972, CDS982, CDTV978, CDS974 (in pairs) CDS992, 7152, 7170, 7180, 9546, 9548, 9564	4/8/16/32Meg	89/171/334/699
Prolinea 4/25S, 4/33, 4/33S, 4/50, 4/66, CDS	1/2/4/8Meg	59/69/109/209
Prolinea MT 4/33S, 4/50, 4/66, Enhanced 4/33S, 4/50S, 4/50, 4/66	4/8/16/32 Meg	109/209/349/699
Prolinea 450, 466, 4100, 575, 590, 5120, 575, 590, 5120 575 mini, 5100 mini, 5133 mini	4/8/16/32Meg	109/209/349/699
Proliant 1500 5/75, 5/100, 1500R 5/75, 5100 (install in pairs)	4/8/16/32Meg	89/171/334/699
Prosignia 300, 575, 590, 500 5/90, 500 5/120 (install in pairs)	4/8/16/32Meg	89/171/334/699
Proliant 1000 5/60, Prosignia 5/60 (install in pairs)	8/16/32/64/128	171/334/699/1398/2900
Proliant 2000 486/50, 5/66, 5/90, 2000R 5/66, 5/90 (install in pairs) 4000 486/50, 5/66, 5/90, 5/100, 4000R 5/66, 5/90, 5/100 4500 5/100, 4500R 5/100	8/16/32/64/128	171/334/699/1398/2900

COMPAQ LAPTOPS & NOTEBOOKS

Compaq LTE 5000 Hard Drive	***810Meg, 1.3Gig***		***699/779***
Elite 5000, 5200	***8Meg/16Meg/32Meg/64Meg***		***219/419/762/1525***
LTE/386S/20	4Meg Module	121125-002	149 00
LTE LITE/20, 25, 25C	4Meg Module	129769-002	149.00
LTE LITE/20, 25, 25C	8Meg Module	129769-003	269 00
LTE LITE/20, 25, 25C	16Meg Module	129769-004	589 00
LTE LITE 425C/33C/25E/25L	4Meg Module	142337-002	134 00
LTE LITE 425C/33C/25E/25L	8Meg Module	142337-003	250 00
LTE LITE 425C/33C/25E/25L	16Meg Module	142337-004	460 00
SLT/386	4Meg Module	118305-001	129 00
Concerto, LTE Elite	4Meg	144790-001	129.00
	8Meg	144790-002	219 00
	16Meg	144790-003	569 00
Contura 320, 325	4Meg	139498-001	129 00
	8Meg	139499-001	229 00
Contura 400, 410, 420, 430	4Meg/8Meg/16Meg		139/225/399
Contura 4/25, 4/25C, 4/25CX	4Meg	146520-001	119 00
	8Meg	146521-001	229 00
	16Meg	146531-001	524 00
Aero 4/25, 4/33	4Meg	190532-001	109 00
	8Meg	190597-001	229 00

HARD DISK DRIVES

CONNER			MAXTOR			WESTERN DIGITAL		
850MB	CFS 850A	$213	1.0 GIG	7850 AV	$219	850MB	AC2850	$218
1.2 GIG	CFS 1275A	240	1.2 GIG	71260 AV	242	1.2 GIG	AC31200	240
1.6 GIG	—	287	1.6 GIG	—	285	1.8 GIG	AC31600	307
1060 SCSI		279						
2.1 SCSI		829						

PCMCIA VERSION 2.0

MODEL	PRICE	MODEL	PRICE
S-RAM Cards 1MEG	$119	Portable CD ROM (2x) & Card	$289
S-RAM Cards 2MEG	199	***SCSI Type II***	***119***
28.8/14.4 Data/Fax Modem	189	***Audio Card***	***149***
14,400/14,400 Data/Fax Modem	89	Multimedia Combo, Sound/SCSI	499
Readwriter Card (15A Slot)	149	Type III 260 Mg Hard Drive	419
Lan Ethernet (Coax), (10 Base T)	89	Xircom Combo Ethernet + Modem II 28 8 Adaptar	549

FLASH RAM (ATA) 4 Meg–169 8 Meg–244 16Meg–399 20Meg & 40Meg–CALL
NON ATA–CALL

CUSTOMER SERVICE & TECHNICAL: OPEN M–F, 9–4 PST

All products brand new & guaranteed • We buy excess inventory

Trademarks are registered with their respective companies.

L.A. TRADE

22825 Lockness Avenue • Torrance, CA 90501

BATTERIES

★ ★ CALL FOR NOTEBOOK AND LAPTOP BATTERIES ★ ★
Compaq, IBM, Toshiba, Epson, AST, TI and More!!

TOSHIBA LAPTOP MEMORY

MODEL	AMT. UPGRADED	MANU. PART #	PRICE
T2000SXE/2200SX/T1800, 1650, C	2Meg/4Meg/8Meg	PC-PA2000U	69/139/279
T2100, 2105, 2150, 2155, 2110, 2115	4Meg/8Meg/16Meg/24 Meg		129/259/449/749
T4400SX, SXC T6400, T6600	4Meg	PC-PA2004U	164 00
T4400SX, SXC T6400, T6600	8Meg	PC-PA2005U	279 00
T4400SX, SXC T6400, T6600	16Meg	PC-PA2010U	599 00
T4500, C, T4600, T4700, T1900, C, T1910, T1950 (3 3 v)	4Meg	PC-PA2012U	129 00
T4500, C, T4600, T4700, T1900, C, T1910, T1950 (3 3 v)	6Meg	PC-PA2013U	239 00
T4500, C, T4600, T4700, T1900, C, T1910, T1950 (3 3 v)	16Meg	PC-PA2014U	469 00
T4700, 4800, 4850 (Hard Drive)	810Meg/1.3 Gig		709/819
T3400CT, T2400, T3600	4Meg/8Meg/16Meg	PC-PA2019U	129/249/519
T3100SX, T3200SX	2Meg	PC15-PA8308U	99 00
T3100SX, T3200SX	4Meg	PC15-PA8310U	139 00
T600, 610, CT Edo	8Meg/16Meg/32Meg		311/610/1207
T700 Edo	8Meg/16Meg/32Meg		366/732/1464
T400CS, 400CDT, T100, 105 Edo	***8Meg/16Meg/32Meg***		***311/610/1207***

NOTEBOOK, LAPTOP MEMORY

MODEL	AMT. UPGRADED	MANU. PART #	PRICE
ACER 730, 735C, 760, 760	2Meg/4Meg/8Meg		89/139/268
ACER 783, 785, 782, 784, 786, 787	4Meg/8Meg/16Meg		139/268/524
ACER 750	4Meg/8Meg/16Meg		139/268/524
ACER Note Pro, ACER Note Lite	***4Meg/8Meg/16Meg***		***119/229/509***
ARM TS38	4Meg/8Meg/16Meg		139/269/524
AST Ascentia 900N, 800N, 810, 910	4Meg/8Meg/16Meg		139/268/524
AST Ascentia 950	8Meg/16Meg		289/534
AST Bravo & Explorer	***4Meg/16Meg***	***501255-001, -002***	***139/534***
AST Notebook Prem Exec 386SX/20/25/25L	4Meg	500814-003	139 00
AST Power Exec 3/25C, 425EL, 425SL	4Meg/16Meg	501166-001, -003	139/619
AST Power Exec 4/33SL	4Meg/16Meg	501318-001,002	149/519
AT&T Globalyst 130 *(Call for other Globalyst)*	4Meg/8Meg/16Meg		119/229/509
AT&T Globalyst 200	4Meg/8Meg/16Meg		139/269/534
AT&T Safari NSX/20	4Meg	PEC 37651	219 00
Austin DX4, DX2, SX2, SX Series	4Meg/16Meg		119/449
Bondwell B310, Plus	1Meg	23050-09100	59 00
Bondwell B310V, SX	4Meg		206
Canon Innova Book 150	4Meg/16Meg		129/499
Canon Innova Book 200LS	4Meg/8Meg/16Meg/24Meg		139/289/549/849
Canon Innova Book 350CD	***4Meg/8Meg/16Meg***		***149/269/519***
Canon Innova 486-10	4Meg/16Meg		119/549
Canon Notejet 486-25	4Meg/8Meg		139/289
Canon Notejet 486-33, 486C, 25 and 33	4Meg/8Meg		149/289
Canon Notejet 486c, 75, 100	8Meg/16Meg		289/579
DEC HiNote, Ultra HiNote	4Meg/8Meg/16Meg		129/219/519
Dell Latitude LX 4100C, MX, MC, M	4Meg/8Meg/16Meg		119/249/499
Dell Latitude XPI	4Meg/8Meg/16Meg		129/289/499
Dell Latitude XP, 475, 4100, 4100CX	4Meg/16Meg		139/549
Dell Latitude 486, 425, 433C, 433CX, 450, 450CX	4 Meg/16 Meg		139/549
Epson ActionNote 650, 650c, 660c, 660cx	4Meg/8Meg/16Meg		139/289/549
Epson ActionNote 700, 700c, 700cx	4Meg/16Meg		119/499
Epson ActionNote 800, 880, 866c	4Meg/8Meg/16Meg/20Meg		119/239/499/619
Epson ActionNote 890	***4Meg/8Meg/16Meg***		***119/229/499***
Epson ActionNote 4000 Notebook	6Meg		189
Epson ActionNote 4LC/25, 4LC/33, 4SLC/2-50	6Meg		189
Everex Tempo LX, LX20, Carrier	2Meg	PCA 00053-0001	89 00
Gateway 2000 Colorbook 4/33	4Meg/16Meg		119/449
Gateway 2000 Nomad 425 DXL/SXL	4Meg/16Meg		170/759
Gateway 2000 486 Handbook or Liberty	4Meg/16Meg		119/499
Gateway 2000 Solo Series	8Meg/16Meg/32Meg		Call
HP Omnibook 300, 480, 425	2Meg/4Meg		83/129
HP Omnibook 530, 600	4Meg/8Meg/12Meg		119/229/419
HP Omnibook 4000	4Meg/8Meg/16Meg		139/289/549
HP Omnibook 5000	8Meg/16Meg/32Meg		229/499/999
Leading Edge Aviva 2000	4Meg/16Meg		119/499
Laxmark SE10	4Meg/8Meg		129/289
Magnavox Metalis	4Meg	286, 386SX	139
Midwest Micro Elite SX-25, SX33, 0X2-50, 0X2-66	4Meg/8Meg/16Meg		119/249/499
Midwest Micro Elite Sndbk SX33, 0X3-50, 0X4-75, 0X4-100	4Meg/8Meg/16Meg		119/249/499
Midwest Micro Elite Sndbk Plus 05-75, 05-90	4Meg/8Meg/16Meg		119/249/499
Mitsuba Ninja II	4Meg/8Meg/16Meg		139/269/524
MPC Model 380	4Meg/8Meg/16Meg		139/269/524
NCR Safari 3180, 3181	4Meg/8Meg		159/299
NEC Ultralite Versa, E, V, MP	4 Meg/8Meg/16Meg/20Meg	DP4104	129/249/499/619
NEC Versa Removable Hard Drive	810Meg/1.3 Gig		509/779
NEC Versa S	4Meg/8Meg/16Meg		129/289/489
NEC Versa 2000C & 2000D	4Meg/8Meg/16Meg		139/289/549
NEC Versa 4000	4/8/16/32Meg		119/249/499/999
Packard Bell 386SX, 286	4Meg	286, 386SX	179
Packard Bell Statesman	2Meg/8Meg		69/219
Panasonic CF170, CF270, CF370	1Meg	CF-BA165	49 00
Panasonic CF380, CF480	2Meg/4Meg/6Meg		79/119/179
Panasonic CF-V21P, CF-580	4Meg/16Meg		119/439
Panasonic CF-V41	4Meg/8Meg/16Meg/32Meg		139/289/S49/1099
Sanyo 17/18 NB	2Meg	MBC-NBMEM2	89 00
Sharp 6781, 6881, 6785, 6700, 6800, 6741	2Meg/4Meg		89/149
Sharp 8150, 8650, 8660, 7700, 7760	4Meg/16Meg		119/439
Sharp 8700, 8800, 8900	4Meg/8Meg/16Meg		119/286/499
Sharp 3010, 3020, 3050, 3060	4Meg/8Meg/16Meg		119/239/499
TI 4000, TI 4000E	4Meg/16Meg		170/768
TI 4000M	4Meg/16Meg		170/768
TI 5000, 5100	***8Meg/16Meg***		***299/529***
TI Extensa, 450, 450T, 455, 455T	4Meg/8Meg/16Meg		129/237/419
TI Extensa, 550, 555, 560, 565 (pairs)	***4Meg/8Meg/16Meg***		***119/249/499***
Tandy 1510, 2810, 3810	1Meg		59 00
Tandy 2820, 3820, 3830	2Meg/4Meg/6 Meg		79/119/179
Twinhead, Altima, Compudyna, 486SX, 0X, Tandy 4860	4Meg/16Meg		119/499
Twinhead Slimnote 5	4Meg/8Meg/16Meg		149/289/589
Ultra 486 TS38	4Meg/8Meg/16Meg		149/289/589
Winbook XP	4Meg/8Meg/16Meg		119/239/499
Zeos 386SX Notebook (not the + version)	2Meg		89 00
Zenith Master Sport 386SX	2Meg	ZA-300-1	99 00
Zenith Master Sport SL, SLE, 600, 620, 625NL	2Meg	ZA-4-4	89 00
Zenith Super Sport 286, 286E	1Meg	ZA-180-66	99 00
286E, SX	2Meg	ZA-180-64	89 00
SX Alpha/SX Beta	2Meg	ZA-180-86/ZA-180-87	89 00
Zenith Z-Note 425LN, LNC, LNP	4Meg		129 00
Zenith Z-Star 4/33	2Meg/8Meg		69/219
Zenith Z-Star EX	***4Meg/8Meg/16Meg***		***119/219/459***

LASER PRINTER MEMORY UPGRADES

AMOUNT UPGRADED	0K Bd	256k	1	2	3	3.5	4	5	6	8	16	32
Brother 630, 631, 641, 645	–	–	69	89	–	–	–	–	–	–	–	–
Canon LBP 430	–	–	39	–	–	–	89	–	–	–	–	–
Canon LBP 860, 1260	–	–	–	89	–	–	99	–	–	199	359	699
Canon LBP4, 4Lite, 4plus	–	–	129	179	–	–	–	–	–	–	–	–
Epson 6000, Action Laser	–	–	–	129	–	–	229	–	–	–	–	–
Epson Action Laser 1100, 1600	–	–	69	70	–	–	99	–	–	199	359	–
Epson Action Laser II	–	–	74	–	173	–	–	272	–	–	–	–
Epson 8000, 1800, 4000, 4100, 4300	–	–	89	–	173	–	–	272	–	–	–	–
Epson 1000, 1500, 5000, 5200	–	–	–	89	–	–	178	–	–	–	–	–
HP 2, 2D–	–	–	–	79	–	–	119	–	–	–	–	–
HP 3, 3D, 3P, 2P 2P+	–	–	–	***79***	–	–	***119***	–	–	–	–	–
HP 4, 4M, 4SI, 4SIMX	–	–	–	59	–	–	109	–	–	199	–	–
HP 4P, 4PLUS, 4MPm 1600, 1600CM	–	–	–	–	–	–	79	–	–	158	–	–
HP 4L	–	–	59	–	–	–	–	–	–	–	–	–
HP 3SI	–	–	69	–	–	–	109	–	–	199	–	–
HP 5L	–	–	59	89	–	–	149	–	–	289	–	–
HP 5P, 5MP, 4V, 4MV	–	–	–	69	–	–	109	–	–	171	334	–
HP Design Jet 600, 650, 200	–	–	–	69	–	–	109	–	–	209	399	789
HP Deskjet 500, 500C, 510, 550, 560	–	***34***	–	–	–	–	–	–	–	–	–	–
HP Deskjet 1200C, 1200C/P	–	–	–	69	–	–	109	–	–	269	–	–
HP Paintjet XL300	54	–	–	–	–	–	89	–	–	199	379	–
IBM Laser 4019, 4019E	–	–	–	–	–	139	–	–	–	–	–	–
IBM Laser 4029, 4037	–	–	–	–	–	–	119	–	–	–	–	–
IBM Laser 4039, 4079	–	–	–	***69***	–	–	***119***	–	–	***209***	–	–
Konica LP-3110, 3115	–	–	119	189	239	–	–	–	–	–	–	–
Laxmark Medley 4C, 4x, 4SX	–	–	Call	Call	Call	–	–	–	–	–	–	–
Lexmark, Optra L, LX, R, RX	–	–	–	–	–	–	89	–	–	171	334	699
Lexmark Valuwriter 300,600	–	–	59	69	–	–	109	–	–	–	–	–
Lexmark Winwriter 200, 400, 600	–	–	59	69	–	–	109	–	–	–	–	–
NEC 90, 290	–	–	–	89	–	–	–	–	–	–	–	–
NEC 95, 97	–	–	–	79	–	–	–	–	–	–	–	–
Oki 400	–	–	–	79	–	–	–	–	–	–	–	–
Oki 400E, 400EX, 410E, 410EX	–	–	89	109	169	–	189	–	–	–	–	–
Oki 830, 840	–	–	–	89	–	–	–	–	–	–	–	–
Packard Bell PB 9500	–	–	–	139	–	–	227	–	–	–	–	–
Packard Bell 9815	–	–	–	139	–	–	229	–	–	–	–	–
Panasonic 4420/4450I	–	–	–	99	–	–	189	–	–	–	–	–
Panasonic 4410/4430	–	–	–	***99***	–	–	***159***	–	–	–	–	–
Panasonic 4450	–	–	69	–	–	–	–	–	–	–	–	–
Panasonic 4400/5400	–	–	89	99	–	–	189	–	–	–	–	–
Panasonic 4440, 5410, 6500	–	–	79	99	–	–	159	–	–	–	–	–
Sharp 9400, 9460, 9600, 9700E	–	–	69	99	–	–	189	–	–	–	–	–
Sharp 9500, E, H, 9700, H	–	–	79	–	–	–	259	–	–	–	–	–
TI XL/PS17/PS35	–	–	49	–	–	–	–	–	–	–	–	–
TI Microlaser Pro E, Powerpro, Pro 600	–	–	89	129	–	–	189	–	–	329	–	–
TI Microwriter	–	–	79	119	–	–	–	–	–	–	–	–

H.P. COMPATIBLE FONT CARTRIDGE

BAR CODES Bar Code Reader Fonts	99 00
DESKJET SOLUTION for DkJt 500 & Plus, 92 Fonts, 4 5 pt-30 pt	99 00
IBM 4019, 4019E, FONT CARTRIDGE 209 Fonts, Turbo Card	105 00
TURBO 25 Comparable to Pacific Data's 25 CARTRIDGES IN ONE™, 143 Fonts *(compat. with Epson Action Laser II and all HP Printers)*	69 00
TURBOSCRIPT™ 109, 109 Scalable Fonts to Any Point Size HP20, 3, 30, 3P, 2P, 2P+	149
TURBOSCRIPT™ 109, 109 Scalable Fonts to Any Point Size HP2	[illegible]
TAX & FINANCE FOR IBM 4019, 4019E, 4029	139
TAX & FINANCE CARTRIDGE	84
OKI 400, 600 41 fonts, 11 typestyles	[illegible]

310-539-0019
FAX: 310-539-5844

SECURITY WILL CALL WINDOW NOW OPEN

CALL TOLL FREE **1-800-433-3726** (US and Canada)

ESTAB. 1985

Prices & Availability Subject to Change Without Notice

Mon-Fri, 8:00 a.m. to 5:00 p.m. PS
Sat. 10:00 a.m. to 12:00 noon

PRICES MAY FLUCTUATE. CALL FOR LATEST PRICING!!

USA FLEX

DISCOUNT PRICES on over 20,000 computer products

✓Notebooks ✓Desktops ✓Printers & Scanners ✓Networking ✓Software ✓Video ✓Multimedia

New Lower Price!

BJC-610 Bubble Jet Printer™

Near photographic color output at 720x720 dpi, free 2-year Instant Exchange warranty and toll-free support. Separate ink cartridges for no-waste ink system, print hi-res color on paper and even fabric with Canon Creative CD-ROM (included). Microsoft® Windows® Printing System.

Only $469

BJC-610

Canon

What Can You Do with a Canon Printer ? ? ?

Canon Creative CD-ROM is included on Canon Color Bubble Jet Printer models BJC-610 and BJC-4100. Creating your own greeting cards, stickers, T-shirts and more was never so fun or easy!

BJC-4100 Bubble Jet Printer™

Only $299

Finally, a business printer you can have fun with! It does great looking impressions at 720x360 dpi in both color and black on plain paper. Includes Canon Creative CD-ROM.

BJC-4100

HEWLETT PACKARD Authorized Reseller

The printer that goes anywhere.

Special printer bundle! Only $199*

HP DeskJet 320 Printer Bundle

Includes HP DeskJet 320 Printer
600x300 dpi, 3 ppm,
C2637A 60-page Sheet Feeder,
and Color Kit.

* $199 when purchased with any notebook from USA Flex
$219 when purchased separately.

Monitors/Video Cards

NEC

14" MultiSync C400	$299
15" MultiSync C500	$389
15" MultiSync MS00	$599
15" MultiSync XV15+	$469
17" MultiSync XV17+	$799
21" MultiSync XE21	$1767
17" MultiSync XP17	$1027
21" MultiSync XP21	$2137

PRINCETON GRAPHICS

PGS 14"	$259
PGS 15"	$369
PGS 17"	$649

SONY

14" CPD-1425	$299
15" CPD-15SX1	$429
Multiscan 155FII	$499
Multiscan 175FII	$879
Multiscan 175EII	$1004*
Multiscan 205FII	$1699*

*Price after instant rebate

CTX

14" 1451C-1	$249
14" 1451CLR-1	$255
15" 1565D1-1	$369
17" 1765GME-1	$669
17" 17B5GME-1	$739
20" 20B5-1	$1199

PANASONIC

15" PanaSync E15	$349
15" PanaSync/Pro P15	$429
17" PanaSync 517	$729
17" PanaSyncC 1792P	$749
21" PanaSync C2192P	$1679

MAG INNOVISION

14" 0X1495	$269
15" DX1595	$379
17" 0X1795	$709
17" MXP17F	$859
21" MX21F	$1699

Scanners

HEWLETT-PACKARD

HP ScanJet 45 Scanner	$289
NEW HP ScanJet 4P Scanner (color/greyscale)	$499
HP ScanJet 4C Scanner (color)	$949

MICROTEK

Scanmaker E3	$379
PageWiz	$199

EPSON

ES300G5	$339
ES1000C	$699
ES1200C	$1119

Multimedia/CD ROM

NEC

MultiSpin 4Xc 4 Disk Changer	$269
MultiSpin 4Xc 7 Disk Changer	$339
MultiSpin 6Xi	$339
MultiSpin 6Xe	$489

PANASONIC

Panasonic 4X, 5 Disk CD-ROM Changer	$299
Panasonic Ext. 4X CD-ROM Drive	$329
Panasonic Portable 4X CD-ROM Drive	$399
Panasonic Portable 4X CD-ROM Drive w/Sound	$599

CREATIVE LABS

Blaster CD 8X PnP	$249
SoundBlaster Value CD 4X PnP	$249
Discovery CD 8X	$379
SoundBlaster Performance 8X PnP	$449
SoundBlaster 16 Value IDE PnP	$99
SoundBlaster AWE 32 PnP	$249
SoundBlaster 32 PnP	$169
Advanced Signal Proc Upgrade Kit	$55
Wave Blaster II	$119

PLEXTOR

PX-63CX 6X CD-ROM	$319
PX-65CS 6X CD-ROM External	$399

PLAY

Snappy Video Capture	$199

SONY

SRS-PC40 Speakers	$75
SRS-PC91	$139
SRS-PC3000 Speakers	$199
CSD 760S (Quad SCSI) CD-ROM	$249

Desktops Systems

NEC

PowerMate Ve, Pentium 75, 8MB RAM, 635MB HD, Desktop	CALL
PowerMate Ve, Pentium 100, 8MB RAM, 1.2GB HD, Desktop	CALL
PowerMate V, Pentium 100, 16MB RAM, 1.2GB HD, Desktop, 4X	$2,119
PowerMate V, Pentium 100, 16MB RAM, 1.2GB HD, Mid-Tower, 4X	$2,129
PowerMate V, Pentium 100, 16MB RAM, 1.6GB HD, Mid-Tower, 6X	$2,199
PowerMate P, Pentium 133, 16MB EDO RAM, 1.2GB HD, Mid-Tower, 4X	$2,499
PowerMate P, Pentium 166, 16MB EDO RAM, 2.0GB HD, Mid-Tower, 6X	$3,119

AST

Advantage! 623, Pentium 100, 8MB RAM, 1.2GB HD, Desktop w/ Monitor	$1,889
Advantage! 625, Pentium 133, 8MB RAM, 1.2GB HD, Desktop, 4X	$1,999
Advantage! B21, Pentium 100, 8MB RAM, 1.2GB HD, Mid-tower, 6X	$1,899
Advantage! B23 Pentium 133, 8MB RAM, 1.6GB HD, Mid-tower, 6X	$2,179
Advantage! B24 Pentium 133, 16MB RAM, 1.6GB HD, Mid-tower, 6X	$2,299
Advantage! B28 Pentium 166, 16MB RAM, 2.1GBHD, Mid-tower, 6X	$2,899

Models do not include monitor unless otherwise stated.

Modems/PC Cards

MEGAHERTZ

PC Card 28.8/14.4 w/X Jack connector	$289
PC Card 28.8/14.4 w/X Jack connector w/cable	$289
PC Card 28.8 Ethernet Modem	
10Base-T w/X Jack connector	$429
10Base-T w/cable connector	$429
10Base-T and 10Base-2 w/X Jack connector	$449
10Base-T and 10Base-2 w/cable connector	$449
PC Card 28.8/14.4 Cellular Capable Fax/Modem	
XJ4288	$299
CC4288	$299

PRACTICAL PERIPHERALS

14.4/14.4 Data/Fax int/ext	$65/$79
V.34 28.8/14.4 Data/Fax int/ext	$155/$169
ProClass PC Card 28.8/14.4	$279
ProClass PC Card 28.8/14.4 w/EZ Port retractable RJ-11 connector	$279

HAYES

PC Card Optima 28.8 V.34 +FAX 14.4 with EZJack™	$239
ACCURA 144+FAX144 in/ext	$79/$89
ACCURA 28BV.FC+FAX int/ext	$169/$199
OPTIMA 14.4 Business modem w/Voice Mail Ext.	$369
OPTIMA 28.8 Business modem w/Voice Mail Ext.	$429
OPTIMA 28B V.FC+FAX int/ext	$369/$429
ESP Communications Accelerator	$75

US ROBOTICS

Sportster 14.4 Data/Fax Plug-n-Play Int/Ext	$91/$107
Sportster 14.4 PC Card	$95
Sportster 28.8 Plug-n-Play Int/Extt	$185/$199
Sportster Voice 28.8/14.4 w/Voice Mail	$215
Sportster Vi 28.8 OSVD	$279
Sportster 28.8 PC Card Plug-n-Play w/Data View	$289
Sportster Winmodem	$135
Courier V. Everything Int/Ext	$339/$359
Courier 28.8 PC w/Data View	$339

Printers...Laser/Ink Jet/Dot Matrix

HP PRINTERS

HP DeskJet 340 Printer Bundle w/ Color, Battery	$309
HP DeskJet 600C/660C/850C Printer	$239/$339/$489
HP DeskJet 1600C /CM Printer	$1299/$1899
HP LaserJet 5L-FS/5P Printer	$489/$849
HP OfficeJet Printer/Fax/Copier Value Pack	$509
HP Fax 700 Fax/Copier Value Pack	$499

EPSON

LX300	$169
LX300 w/ Color Kit	$215
LQ-570+/1070+	$245/$385
FX-870/1170/2170	$289/$379/$499
LQ-870/2170	$447/$599
DFX-5000+/8000	$1395/$2329
Stylus Color IIs	$169*
Stylus Color II	$269*
Stylus Pro	$499
Stylus 1500	$995
Stylus Pro XL	$1799

*Price after $30 Mail-In Rebate

BROTHER

WL-660	$399
HL-960	$989
MFC-4000 ML	$799
MFC-4500 ML	$959

TI PRINTERS

microLaser WIN/4	$379
microLaser 600	$679
microLaser PowerPro/12	$1199

Unbelievable prices

OKIDATA PRINTERS

OL600e	$399
OL610e	$519
OL810E	$799
ML320/ML321	$319/$449
ML590/ML591	$449/$609
Okijet 2010	$339

CANON

BJC-210	$199
BJ-230 wide carriage	$384
BJC-70	$349
BJC-4100	$299
BJC-610	$469

New lower prices

LEXMARK

Winwriter 150C	$279
Color Jetprinter 1020	$209
Color Jetprinter 2070	$399
Optra E	$549
4039 10Plus	$1089
Optra R+/OptraR+	$1399/$1599
Optra Lx+	$1959
Optra Lxi+	$2639
Optra C Color Laser	$5999

New lower prices

PANASONIC PRINTERS

KX-P6100	$369
KX-P6500	$419
KX-P1150/P2023	$135/$179
KX-P3124	$315
KX-P3626	$389

Notebook Computers

TOSHIBA ENCORE

A Value Worthy of a Standing Ovation

Toshiba Certified Remanufactured Notebooks For Less from USA FLEX . . . Your Authorized Toshiba Encore Dealer!

Full 1 Year Warranty on all Toshiba Encore Products!

Satellite

T2110CS features Intel 486 DX4-75MHz processor, 10.4" Color Dual Scan Display, 350MB HD, 4MB RAM (Max. 28MB). $999
T2115CS features Intel 486 DX4-75MHz processor, 10.4" Color Dual Scan Display, 350MB HD, 4MB RAM (Max. 28MB). With MS-DOS and Win 3.11 OR With Win 95 ..... Your choice, only $999
T100CS features Intel Pentium 75MHz processor, 10.4" Color Dual Scan Display, 504MB HD, 8MB RAM (Max. 40MB). $1799
T105CS features Intel Pentium 75MHz processor, 10.4" Color Dual Scan Display, 504MB HD, 8MB RAM (Max. 40MB). $1799
T2150CDT features Intel 486 DX4-75MHz processor, 10.4" Color Active Matrix Display, 500MB HD, 8MB RAM (Max. 32MB). $2499

Satellite Pro™

T2135CS features Intel 486 DX4-75MHz processor, 10.4" Color Dual Scan Display, 520MB HD, 8MB RAM (Max. 32MB). With MS-DOS/Win 3.11 OR With Win 95. ..... Your choice, only $1399
T2155CDS features Intel 486 DX4-75MHz processor, 10.4" Color Dual Scan Display, 520MB HD, 4MB RAM (Max. 28MB), CD-ROM Drive. With MS-DOS/Win 3.11 OR With Win 95. ..... Your choice, only $1599
400CS features Intel Pentium 75MHz processor, 10.4" Color Dual Scan Display, 810MB HD, 8MB RAM (Max. 40MB) With MS-DOS and Win 3.11 OR With Win 95. ..... Your choice $2499
410CS features Intel Pentium 90MHz processor, 11.3" Color Dual Scan Display, 810MB HD, 8MB RAM (Max. 40MB) Includes DOS/Win 3.11. ..... $2899
410CDT features Intel Pentium 90MHz processor, 11.3" Color Active Matrix Display, 810MB HD, 8MB RAM (Max. 40MB), CD-ROM Drive. Includes DOS/Wins 3.11 ..... $4099

PORTÉGÉ

610CT features Intel Pentium 90MHz processor, 9.5" Color Active Matrix Display, 720MB HD, 8MB RAM (Max. 40MB) Includes Wins 95. ..... $3599

TECRA™

700CS features Intel Pentium 120MHz processor, 11.3" Color Dual Scan Display, 1.2GB HD, 8MB RAM (Max. 40MB). Includes Win 95. ..... $3599
700CT features Intel Pentium 120MHz processor, 11.3" Color Active Matrix Display, 1.2GB HD, 16MB RAM (Max. 48MB). Includes Win 95. ..... $4599

Call Today! Quantities Limited! Prices Subject to Change.

TOSHIBA

Satellite 1DDCS Pentium 75, Dual Scan, 52BMB	$1969
Satellite Pro 410CS, Pentium 90, Dual Scan, 810MB	$3199
Satellite Pro 410CT Pentium 90, Act. Color, 810MB	$4399
Portege 610CT, Pentium 90, Active Color, 720MB	$3889
Tecra 700CS, Pentium 120, Dual Scan, 1.2GB	$3999
Tecra 700CT, Pentium 120, Active Color, 1.2GB	$4999
NEW Tecra 710CDT Pentium 133, 12.1 Active Color, 1.2GB, 6x CD-ROM, 28.8 Modem	$6879
NEW Tecra 720CDT Pentium 133, 12.1 Active Color, 1.2GB, 6x CD-ROM, 28.8 Modem	$7429

TEXAS INSTRUMENTS

EXTENSA 560CD Pentium 75, 10.4" Dual Scan 810MB	$2699
EXTENSA 560CDT Pentium 75, 10.4" Active 1.2GB	$3679
TI5100 Pentium 90, 10.4" SVGA Color 1.2GB	$3379
TI5200 Pentium 120, 10.4" SVGA Color 1.2GB	$4649
TI5300 Pentium 133, 11.3" SVGA Color 1.2GB	$5329

TI Performance Pay-Off Promotion
Save $450 on a genuine TI 8MB RAM Option Kit (Part # 9798816-0001R) or save $300 on a TI DockMate NetReady docking station (Part #9794572-0001R)
Offer good with purchase of TM5200 or TM5300 Notebook.

NEC

VERSA 550D 5x86-100MHz, 10.4" Dual Scan, 540MB	$1799
VERSA 2200C Pentium 75, 9.5" Active Color 810MB	$2449
VERSA 2205C Pent. 75, 9.5" Active Color 810MB, 14.4 Modem	$2499
VERSA 4000C Pentium 75 Active Color 810MB 4X CD-ROM	$3799
VERSA 4050C Pentium 90 Active Color 810MB 4X CD-ROM	$4499
VERSA 4050H Pentium 90 Hi-Res Color 810MB	$4499
VERSA 4080H Pentium 120 Hi-Res Color 1.0GB	$4999

IBM ThinkPad

365E SX86, 10.4" Dual Scan, 540MB	$1999
365ED SX86, 10.4" Dual Scan, 540MB, 4XCD	$2499
365XD Pentium 100, 10.4" Dual Scan, 810MB, 4XCD	$2949
365X Pentium 100, 10.4" Dual Scan, 810MB	$2649
365X Pentium 100, 10.4" Active, 810MB	$3049
365XD Pentium 120, 10.4" Active, 1.0BGB, 4XCD	$3899
365XD Pentium 120, 11.3" Dual Scan, 1.0BGB, 4XCD	$3499
760ED Pentium 133, 12.1" Active, 1.2GB, 4X CD	$6999
760E Pentium 120, 12.1" Active, 1.2GB	$5299
760E Pentium 133, 12.1" Active, 1.0BGB	$5999
760E Pentium 120, 12.1" Active, 810MB	$4999
760DL Pentium 133, 12.1" Active, 1.0BGB	$5499
760EL Pentium 120, 12.1" Active, 1.0BGB	$4899
760DLD Pentium 100, 12.1" Active, 810MB, 4XCD	$4499
760EL Pentium 120, 11.3" Dual Scan, 810MB	$3599
760EL Pentium 100, 11.3" Dual Scan, 810MB	$3399

USA FLEX

To order, call...

1-800-876-5606

Code # WD0606 Please refer to this code when ordering.

USA Flex, Inc., 444 Scott Dr., Bloomingdale, IL 60108

Circle 231 on reader service card

Federal Express® Delivery Service Available

FedEx

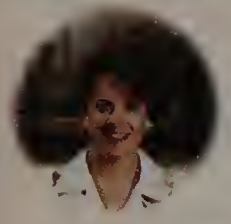
No Surcharge On These Credit Cards

MasterCard VISA DISCOVER

Video Training for Windows Applications

Windows Training Videos

Dennis Taylor
Microsoft Excel Specialist
& Excel Instructor



Alison Balter
Microsoft Certified Developer
& Access Instructor

Chris Maio
Lotus Certified Trainer
& Notes Instructor

Excel 95
Beg•Int•Adv•Special Features(ea) $49.95
Special All Four Videos $159.95

Word 95
Beg•Int•Adv .....(ea) $49.95
Mail Merge & Forms .....(ea) $49.95
Forms•DTP .....(ea) $49.95
Special All Six $239.95

Windows 95
Beg•Int•Adv $49.95
Special Any Three $129.95
Networking $49.95
Installation $49.95
Special Features $49.95
Special All Six $239.95

PowerPoint 95
Beg•Int•Adv .....(ea) $49.95
Special All Three $129.95

Access 95
Beg•Int•Adv $49.95
Special All Three $129.95
App Dev Lev 1•Lev 2•Lev 3 (ea) $B9.95
App Dev Lev 4•Lev 5•Lev 6 (ea) $B9.95
Developer's Toolkit $B9.95
Special all Seven $495.95

Visual Basic 4.0
Unit 1•Unit 2•Unit 3
Unit 4•Unit 5•Unit 6 .....(ea) $B9.95
Special All Six $449.95

Visual FoxPro 3.0
Unit 1•Unit 2•Unit 3
Unit 4•Unit 5•Unit 6 .....$B9.95
Special All Six $449.95

Visual C++ 4.0
Lev 1•Lev 2•Lev 3 .....(ea) $B9.95
Unit 4•Unit 5•Unit 6 .....$B9.95
Special All Six $449.95

Project 95
Lev 1•Lev 2•Lev 3•Lev 4 .(ea) $79.95
Special All Four $299.95

Notes 4
App Dev Lev 1•Lev 2•Lev 3 (ea) $B9.95
Sys. Manage Lev 1•Lev 2 .(ea) $B9.95
User $49.95
Special All Six $449.95

Windows NT 3.5
Installation•Serv Lev 1-2 ..(ea) $B9.95
Workstation .....(ea) $49.95
Special All Four $299.95

SQL Server 6.0
Lev 1•Lev 2•Lev 3 .....(ea) $B9.95
Client Server Dev. $89.95
Three-Tier Arch. $89.95
Special All Five $399.95

CorelDRAW 6
Beg•Int•Adv .....(ea) $49.95
Special All Three $129.95

WordPerfect 6.1
Beg•Int•Adv .....(ea) $49.95
Desktop Publishing $49.95
Mail Merge/Forms $49.95
Special All Five $199.95

Other Videos

Microsoft Training Videos
Microsoft Office 4.x/95 Combinations Call
Microsoft Office Integration $19.95
Access 2.0 Beg/Int/Adv (set) $129.95
Excel 5.0/7.0 - Beg/Int/Adv (set) $129.95
Mail $49.95
Publisher 2.0/95 - Basics/Pwr Tools (set) $B9.95
PowerPoint 3.0/4.0 - Beg/Int/Adv (set) $129.95
Schedule+ 95 - Basics/Special Features $89.95
SMS Server 1.0 - Level 1/2/3 (set) $249.95
Visual Basic 3.0/4.0 - Level 1-6 (set) $449.95
Visual FoxPro 3.0 - Level 1-6 (set) $449.95
Windows 95/3.1 - Beg/Int/Adv (set) $129.95
Windows for Workgroups 3.x $59.95
Word 6.0/7.0 - Beg/Int/Adv (set) $129.95
Works 3.0/95 - 2 videos (set) $B9.95

Lotus Training Videos
Lotus Smart Suite Combinations Call
1•2•3 4/5 - Beg/Int/Adv (set) $129.95
AmiPro 3.0 - Beg/Int/Adv (set) $129.95
Approach 96/3.0 - Beg/Int/Adv (set) $129.95
Freelance 96/2.0, Beg/Int/Adv (set) $129.95
Organizer 1.1/2.0 $49.95
Word Pro 96 - Beg/Int/Adv (set) $129.95

Novell Training Videos
Novell Perfect Office Combinations Call
Envoy 1.0 $49.95
GroupWise 4.1 - User Level 1/2 (set) $89.95
GroupWise 4.1 - Admin - Level 1/2 (set) $159.95
InfoCentral 1.1 $49.95
Netware 4.1 - Level 1-7 (set) $495.95
Perfect Office Integration 3.x $19.95
Presentations 3.0 - Beg/Int/Adv (set) $129.95
Quattro Pro 5.0/6.0 Beg/Int/Adv (set) $129.95
WordPerfect 6.0/6.1 - Beg/Int/Adv (set) $129.95

Other Training Videos
ACT! 2.x Beg/Int/Adv (set) $129.95
AutoCAD 13 - Level 1-4 (set) $329.95
CorelDraw 4/5 - Beg/Int/Adv (set) $129.95
DataCAD - Beg/Int/Adv (set) $199.95
dBase 5.0 - Beg/Int/Adv (set) $129.95
Delphi 2.0 Level 1-6 (set) $449.95
Harv. Graph. 3.0 - Beg/Int/Adv (set) $129.95
Internet User Developer - Level 1-3 (set) $249.95
PageMaker 5.0 - Beg/Int/Adv (set) $129.95
Paradox 4.5/5.0 - Beg/Int/Adv (set) $129.95
Peachtree 3.0 - Beg/Int/Adv (set) $129.95
QuarkXPress 3.3x - Beg/Int/Adv(set) $129.95
Quicken 3.0/4.0 - Basics/Pwr Tools (set) $89.95
QuickBooks 3.0 - Beg/Int/Adv (set) $129.95

Ask about KeyNotes $14.95 ea — KeyStone's Training Workbooks

KeyStone Learning Systems Corp.

Average: 2 hours training per video

All Videos Available in PAL (European Format)

RISK FREE 30 DAY Money Back Guarantee

Office 95

Special Microsoft Office 95 Video Combinations

Office Integration Video $19.95 with Office Combo purchase — $49.95 Value

Microsoft Office 95 Standard — $349.95 (with KeyNotes $469.95)
- 3 Word 95, 3 Excel, 3 PowerPoint (Beg/Int/Adv)
- 9 videos with over 17 hours of training

Microsoft Office 95 Pro — $495.95 (with KeyNotes $639.95)
- 3 Word 95, 3 Excel 95, 3 Access 95 (Beg/Int/Adv)
- 3 PowerPoint 95, 1 Schedule+ training videos
- 13 videos with over 24 hours of training

Microsoft Office 95 Plus — $579.95 (with KeyNotes $749.95)
- 3 Word 95, 3 Excel 95, 3 Access 95(Beg/Int/Adv)
- 3 PowerPoint 95, 3 Windows 95, 1 Schedule+
- 16 videos with over 29 hours of training

Microsoft Office

Special Microsoft Office Video Combinations

MS Office 4.x Integration Video $19.95 with any Combo purchase

Microsoft Office 4.x Standard — $349.95 (with KeyNotes $469.95)
- 3 Word 6.0, 3 Excel, 3 PowerPoint (Beg/Int/Adv)
- 9 videos with over 17 hours of training

Microsoft Office 4.x Pro — $495.95 (with KeyNotes $639.95)
- 3 Word 6.0, 3 Excel 5.0, 3 Access 2.0 (Beg/Int/Adv)
- 3 PowerPoint 4.0, 1 MS Mail training videos
- 13 videos with over 24 hours of training

Microsoft Office 4.x Plus — $579.95 (with KeyNotes $749.95)
- 3 Word 6.0, 3 Excel 5.0, 3 Access 2.0 (Beg/Int/Adv)
- 3 PowerPoint 4.0, 3 Windows 3.1, 1 MS Mail
- 16 videos with over 29 hours of training

Three Easy Ways to Order

CALL ▶ 1-800-748-4838
801-375-8680

FAX ▶ 1-801-373-6872

MAIL ▶ KeyStone Learning Systems Corp.
2181 Larsen Parkway
Provo, UT 84606

http://www.keylearnsys.com/

AD# PW66

Domestic Shipping: $5.00 for the first two video tapes; plus $1.50 for each additional video tape.
International Orders: Shipping cost will vary, call for details.

WordPerfect®, MS and Microsoft®, Lotus®, Borland®, Aldus® and their products, are trademarks and/or registered trademark of Novell Inc., Microsoft Corp., Lotus Development Corp., Borland International Inc., and Aldus Corp., respectively.

Circle 156 on reader service card

PCs COMPLEAT

800-827-1355

CALL for Guaranteed Lowest Price on Systems

YOUR NOTEBOOK

TOSHIBA

WIN95 INSTALLED

Satellite Pro 410

Satellite Pro 410

- Built-in 4X CD-ROM Drive (Active model only)
- Built-in 16-bit sound, microphone, speaker & MIDI
- EDO RAM memory, expandable to 40MB
- Built-in AC adapter - small, sleek design & reduced weight
- Integrated Accupoint - small, accurate & easy to use
- Lithium Ion battery technology
- Built-in infrared for wireless communications

Processor	Screen	RAM/HD	Price
Pentium 90	11.3" Dual Scan SVGA	8/772M8	$3199
Pentium 90	11.3" Active SVGA	8/772M8	4399*

* Features built-in 4X CD-ROM drive

Satellite 100CS

Processor	Screen	RAM/HD	Price
Pentium 75	10.4" Dual Scan	8/500M8	$1969*

*EDO RAM

90MHz Pentium

Portégé 610CT

- Pentium 90MHz processor
- 9.5" True Color display for optimum color
- Built-in 16-bit SoundBlaster Pro compatible sound, microphone & speaker
- Lithium Ion battery technology
- Integrated Accupoint for easy control

Processor	Screen	RAM/HD	Price
Pentium 90	9.5" True Color	8/720MB	$3899

WIN95 INSTALLED

Portégé 610CT

Built-In CD-ROM

6X Speed!

BIG! 11.3" or 12.1" Display

Tecra 720

Tecra 700 and 720

- Pentium 120MHz & 133MHz processors
- PCI bus architecture (internal & external)
- 11.3", 800x600 high res. display (Tecra 700)
- 12.1", 1024x768 high res. display (Tecra 720)
- Built-in 28.8 fax/modem with speaker phone (Tecra 720 model only)
- Built-in 6X CD-ROM Drive (Tecra 720)
- Optional 4X CD-ROM Drive (Tecra 700)

Processor	Screen	RAM/HD	Price
Pentium 120	11.3" Dual Scan SVGA	8M8/1.13G8	$3999
Pentium 120	11.3" Active SVGA	16M8/1.13G8	4999
Pentium 133	12.1" Active SVGA	16M8/1.2GB	7469*

* Features built-in 6X CD-ROM drive

TOSHIBA

ENCORE

Authorized Reseller of Toshiba Factory Refurbished Products Call For Details

Introducing Toshiba Refurbished Notebooks

- Manufacturer Warranty
- Toll-Free Technical Support
- 7-Day Lowest Price Guarantee and Return Policy

Prices as low as $999!

Best models, best quality at a price worthy of a standing ovation.

Call today for latest models.

IBM®

IBM Business Partner — Authorized Personal Computer Dealer

ThinkPad® 760E and 760ED

NEW!

Processor	Screen	RAM/HD	Price
Pentium 120	12.1" Active SVGA	8/810M8	$4999
Pentium 120	12.1" Active SVGA	8M8/1.2G8	5299
Pentium 133	12.1" Active SVGA	16M8/1.08GB	5999
Pentium 133	12.1" Active SVGA	16M8/1.2GB	6999*

* Includes built-in 4X CD-ROM drive

ThinkPad® 760EL and 760ELD

NEW!

Processor	Screen	RAM/HD	Price
Pentium 100	11.3" Dual Scan	8/810M8	$3349
Pentium 100	12.1" Active SVGA	8/810M8	4499*
Pentium 120	11.3" Dual Scan	8/810M8	3549
Pentium 120	12.1" Active SVGA	8M8/1.08G8	4899
Pentium 133	12.1" Active SVGA	16M8/1.08G8	5399

* Includes built-in 4X CD-ROM drive

Also available ThinkPad® 760L and 760LD models! Call for details.

ThinkPad® 760

- Up to 120MHz Pentium with 32-bit Local bus
- 12.1" Active display with 800x600 resolution (selected models)
- 4X CD-ROM Drive, MPEG-2 support, & full motion video (ThinkPad760CD*)
- Built-in 28.8 fax/modem
- SoundBlaster-compatible audio & telephony
- Lithium Ion battery technology

BIG! 12.1" Display

ThinkPad® 760

Processor	Screen	RAM/HD	Price
P90	10.4" Active SVGA	8/720M8	$4999
P90	12.1" Active SVGA	8/720M8	5499
P120	12.1" Active SVGA	8/720MB	5699
P120	12.1" Active SVGA	8M8/1.0G8	5999
P90	12.1" Active SVGA	8M8/1.2G8	6699*
P120	12.1" Active SVGA	8M8/1.2G8	6899*

*Features built-in 4X CD-ROM drive

WIN 95 models available. Call for details.

NEC

NEC Versa 2205

- 75MHz Pentium
- Built-in 14.4 data fax/modem
- Lithium Ion battery standard
- 810MB removable hard-drive
- 32-bit Local bus graphics

Processor	Screen	RAM/HD	Price
Pentium 75	9.5" Active	8/810M8	$2499

NEC Versa 4000

Built-In CD-ROM

NEC Versa 4000

- Built-in 4X CD-ROM Drive! (selected models)
- Up to 120MHz Pentium processors
- 256KB Level 2 Cache to optimize performance
- Unbelievable display – 65K color Dual Scan, 16.8 million color Active (High resolution 800x600 Active Matrix displays available)
- Built-in 16-bit sound, microphone, MIDI and 2 built-in speakers
- Multimedia docking station with outstanding Altec Lansing 4 speaker array (optional accessory, priced separately)

Now available with 4X CD-ROM

Processor	Screen	RAM/HD	Price
Pentium 75	10.1" Active	8/810M8	$3799*
Pentium 90	10.4" High Res.	8/810M8	4499
Pentium 90	10.1" Active	8/810M8	4499*
Pentium 120	10.4" High Res.	8M8/1G8	4999

* Features built-in 4X CD-ROM drive

© 1996 PCs Compleat. All prices and specifications subject to change and do not include shipping. All products or brand names are trademarks of their respective companies. PCs Compleat, 34 St. Martin Drive, Marlborough, MA 01752-3021. Phone (508) 624-6400. Not responsible for typographical errors. All trademarks and registered trademarks are the sole property of their respective owners. Lowest price guarantee applies to system purchases only.

PCW 6/96

ONLY at PCs COMPLEAT ✓ Lowest Price Guarantee ✓ 30-Day Money Back Guarantee ✓ Free Tech Support ✓ Free Software Installation ✓ Free Configuration

COMPLEAT LINEUP

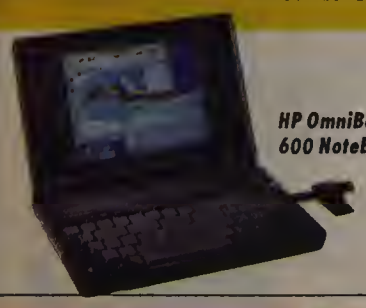
Call for a FREE PRODUCT GUIDE

PCs COMPLEAT

We carry a complete lineup of notebook & desktop upgrades and accessories

800-827-1355

HEWLETT® PACKARD



HP OmniBook 600 NoteBook PC

HP OmniBook 600

- Weighs **ONLY 3.8 pounds!**
- Built-in 16-bit sound, microphone & speaker (Active model only)
- Built-in infrared for wireless communications
- Lithium Ion battery technology (Active model only)
- Instant "ON" ready-to-work state – lasts for months on a charge

Processor	Screen	RAM/HD	Price
486DX4/75	9.5" Active	8/340MB	$2500

HP OmniBook 5500

133MHz Pentium with PCI BUS

- 133MHz Pentium with 32-bit PCI Local bus
- 12.1" Active Matrix display with 65,000 colors
- Super VGA-800x600 resolution on notebook
- PCI Local bus Video, 1.5MB video memory
- 16-bit stereo sound with 2 speakers
- Optional 4X CD-ROM available

Processor	Screen	RAM/HD	Price
Pentium 133	12.1" Active SVGA	16MB/1.35GB	$6000

Additional HP OmniBook models available! Call for details.

HP OmniBook 5500 NoteBook PC

AST® Authorized Reseller

UP TO 133MHz PENTIUM

Ascentia P

AST, AST logo are trademarks of AST Research, Inc. All rights reserved.

AST Ascentia P

- Pentium 100MHz and 133MHz processors
- Standard SmartBay – swap 4X CD-ROM, 3.5" floppy or optional 2nd battery
- 11.3" Dual Scan & Active displays with 800x600 resolutions
- 800MB & 1.2GB removable hard drives
- Built-in Soundblaster 16 Vibra chipset

Processor	Screen	RAM/HD	Price
Pentium 100	11.3" Dual Scan SVGA	8/800MB	$3300
Pentium 100	11.3" Dual Scan SVGA	8MB/1.2GB	3780
Pentium 133	11.3" Active SVGA	8/800MB	4250
Pentium 133	11.3" Active SVGA	8MB/1.2GB	4730

AST Ascentia J

- Integrated 14.4/14.4 Data/fax modem and audio
- PCI bus architecture with 256KB Level 2 cache memory
- 10.4" SVGA (800x600) resolution Dual Scan and Active display

Processor	Screen	RAM/HD	Price
Pentium 75	10.4" Dual Scan SVGA	8/500MB	$2150
Pentium 100	10.4" Dual Scan SVGA	8/800MB	2640
Pentium 100	10.4" Active Matrix SVGA	8/800MB	2840
Pentium 133	10.4" Active Matrix SVGA	8/800MB	3300

COMPAQ

Contura 430

- 10.4" Active & Dual Scan
- Fast 486DX4/100 processors
- Optical trackball – smoother and more reliable
- High capacity 720MB drives
- Compaq 3-year worldwide warranty

Processor	Screen	RAM/HD	Price
486DX4/100	10.4" Dual Scan	8/720MB	$2369
486DX4/100	10.4" Active	8/720MB	2939

LTE 5000 Series

- Up to 120MHz Pentium power w/PCI bus & 256KB cache
- 32-bit PCI Local bus graphics
- 8MB RAM exp. to 72MB
- Built-in 16-bit sound, microphone & 2 speakers
- MultiBay – holds CD-ROM, 2nd HDD, floppy or 2nd battery
- Up to 1.35GB hard drives
- Built-in infrared for wireless communications
- Supports NiMH batteries
- Optional MPEG and TV video adapter

WIN95 INSTALLED

NEW LOW PRICES!

Processor	Screen	RAM/HD	Price
Pentium 75	10.4" Dual Scan	8/510MB	$2830
Pentium 75	11.3" Dual Scan	8/810MB	3210
Pentium 75	10.4" Active	8/810MB	3590
Pentium 90	10.4" Active	8/810MB	3970
Pentium 90	10.4" Active	8/810MB	4340*
Pentium 120	10.4" Active	8MB/1.35GB	4720

* Features Built-in 4X CD-ROM drive

UP TO 120MHz PENTIUM with PCI BUS

LTE 5000

TEXAS INSTRUMENTS

Extensa 510

Processor	Screen	RAM/HD	Price
Pentium 100	10.4" Dual Scan	8/810MB	$2250

New Models!

Extensa 560

Extensa 560/570 CD & CDT

- 75MHz & 100MHz Pentium processors w/PCI bus & 256KB cache
- Built-in 4X CD-ROM drive
- Built-in 16-bit sound, microphone & speaker

WIN95 INSTALLED

Processor	Screen	RAM/HD	Price
Pentium 75	10.4" Dual Scan	8/810MB	$2749
Pentium 75	10.4" Active	8MB/1.2GB	3699
Pentium 100	11.3" Dual Scan	8/810MB	2930
Pentium 100	10.4" Active	8MB/1.2GB	3910

TravelMate 5130/5270/5300

Processor	Screen	RAM/HD	Price
Pentium 90	10.4" Active SVGA	8MB/1.2GB	$3420
Pentium 120	11.3" Active SVGA	8MB/1.2GB	4700
Pentium 133	11.3" Active SVGA	8MB/1.2GB	5390

Ask about TravelMate 5270 & 5300 accessories promotion!

HEWLETT® PACKARD

New Models!

HP LaserJet Printers

HP LaserJet 5L printer (IBM, 4ppm, 600dpi) C3941A	$ 479.00
HP LaserJet 5P printer (IBM, 6ppm, 600dpi) C3150A	879.99

Home Office Products

HP OfficeJet LX C2891A	$ 599.99
HP FAX-700 C3530A	509.99

HP InkJet Printers

HP DeskJet 340 printer (portable) C2655A	$ 289.99†
HP DeskJet 340 CV (bundle) C2664A	309.99†
HP DeskJet 320 (bundle) C2637A#ABA	199.99†
HP DeskJet 600 printer C2184A	209.00
HP DeskJet 600C printer C4547A	259.00†
HP DeskJet 660C printer C2164A	359.00†
HP DeskJet 660Cse printer C4548A	369.00*†
HP DeskJet 820Cse printer C4568A#ABA	399.00*†
HP DeskJet 855C printer C4551A	449.00*†
HP DeskJet 855Cse C4575A#ABA	499.00*†
HP DeskJet 1600C printer C3540A	1349.99†

* Includes Family Font Package † Includes HP Color Kit

Call about Big Savings on HP DeskJet Printer Bundles

HP DeskJet 340

Save 5%-35%

More Brand Names, Peripherals and Software available. If you don't see it, CALL!

International: 508-624-6400
Email: sales@pcscompleat.com
Visit us at www.pcscompleat.com
Open 24 Hours weekdays. 8am–8pm weekends.

800-827-1355

Circle 129 on reader service card

Sunshine Computers

File Edit Search View Mode Run Options Help

COOL SOFTWARE • COLORFUL PRINTERS

FAST NOTEBOOKS • BEST MULTIMEDIA PCs

LEASES AS LOW AS $50 a month! Ask Your Rep!

NOTEBOOKS

TOSHIBA

NEW TECRA 710CDT & 720CDT
710CDT Pentium® 133MHz 16/1.2GB 12.1 TFT 6X CD ..... CALL
720CDT Pentium® 133MHz 16/1.2GB 12.1 TFT 6X CD ..... CALL

SATELLITE PENTIUM®
100CS Pentium® 75MHz 4/500 Dual $1875

TECRA PENTIUM®
700CS Pentium® 120MHz 8/1.2GB Dual $3899
700CT Pentium® 120MHz 16/1.2GB Active $4895

SATELLITE PRO SERIES
T410CS Pentium® 90MHz 8/810 ..... $3159

PORTEGE SERIES
T610CT Pentium® 90MHz 8/720 Active ..... CALL

TEXAS INSTRUMENTS
Dockmate Docking Station BEST BUY

NEW EXTENSIATM 510 AND 570 SERIES
TI 510 Pentium® 100MHz 8/810 10.4"Dual CD ..... CALL
TI 570CD Pent 100MHz 8/810 11.3" Dual 6XCD ..... CALL
TI 570CDT Pent 100MHz 8/1.2GB 10.4" Active 4XCD ..... CALL

TRAVELMATETM 5100 AND 5200 SERIES
TI 5100 Pentium® 90MHz 8/1.2GB SVGA TFT Active $3365
TI 5200 Pent 120MHz 8/1.2GB SVGA TFT Active $5049

TRAVELMATETM 5300 SERIES
TI 5300 Pent 133MHz 8/1.2GB 11.3" SVGA TFT ..... CALL

NEC

VERSA 4000C Pent 75MHz 8/810 Active 4XCD $3659
VERSA 4050C Pent 90MHz 8/810 Act 4XCD $4329
VERSA 4050H Pent 90MHz 8/810 High Res $4339
VERSA 4080H Pent 120MHz 8/1.2GB Hgh Res $4825

HEWLETT® PACKARD

Authorized Reseller

Hewlett Packard Omnibook 5000

HEWLETT PACKARD 200 LX SERIES
HP PALM TOP 200LX - 1MEG $489
HP PALM TOP 200LX - 2MEG $619

HEWLETT PACKARD 600 SERIES
HP 600C DX75 8/340 Dual $2119
HP 600CT DX75 8/340 Active $2425

HEWLETT PACKARD 5000 SERIES
HP 5000CT Pentium® 90MHz 8/810 Active $4169
HP 5000CT Pentium® 90MHz 8/1.2GB VGA $4545
HP 5000CTS Pentium® 90MHz 16/1.2GB SVGA $5019
HP 5000CTS Pentium® 120 MHZ 16/1.2GB SVGA ..... CALL
HP 5500 Pentium® 133 MHZ 16/1.2GB SVGA ..... NEW CALL
• PCI Bus, L2 cache, SCSI, & Lilon Battery

HEWLETT PACKARD 5000 VL SERIES
HP 5000C Pentium®VL 90MHz 8/810 Dual $3239
HP 5000CT Pentium®VL 90MHz 8/1.2GB Active $4179
• PCI Bus, NIMH Battery

ZENITH DATA SYSTEMS

Z-NOTE GT SERIES
Pentium® 90MHZ 8/1.3GB Active CD ROM $4529

Z-NOTE MX SERIES
Pentium® 100 MHZ 8/810 Dual $2539
Pentium® 100MHZ 8/810 Active $3265

AST

AUTHORIZED DEALER

CALL FOR LATEST PRICING!!

ASCENTIA P SERIES
Pentium 100 Mhz 8/800 • 8/1.2 11.3" CD-ROM ..... CALL
Pentium 133 Mhz 8/800 • 8/1.2 11.3" CD-ROM ..... CALL

ASCENTIA J SERIES
Pentium 75 Mhz 8/500MB Dual $2139
Pentium 100 Mhz 8/800MB Dual $2625
Pentium 100 Mhz 8/800MB Active $3099

IBM Premier Business Partner
Authorized Personal Computer Dealer

CALL • NEW IBM 365 Pentiums

IBM THINKPAD 760 SERIES
760L Pentium® 90MHz 8/810 10.4 VGA ..... CALL
760LD Pentium® 90MHz 8/810 10.4 VGA CD-ROM ..... CALL
760C Pentium® 90MHz 8/720 Active 10.4 ..... $4999
760C Pentium® 90MHz 8/720 Active 12.1 ..... $5499
760CD Pentium® 90MHz 8/1.2GB 12.1" Active $6699
760C Pentium® 120MHz 8/720 12.1" Active $5699
760CD Pentium® 120MHz 8/1.2GB 12.1" SVGA ..... CALL*
760C Pentium® 120MHz 8/1.08GB 12.1" SVGA ..... CALL
*CD-ROM, MPEG (Moving Picture Expert Group)

PRINTERS

brother

HL630 Laser Printer, 6ppm, 300 dpi $389
HL645 Laser Printer, 6ppm, 300dpi $429
HL660 Laser Printer, 6ppm, 600dpi $595
HL960 Laser Printer, 12ppm, 600 dpi $955
Printer,Scanner,Copier,Fax,Modem
MFC-4500ML/MFC-5550ML ..... $909/$969

OKIDATA

OL600e $399
OL610e $485
OL610e/PS $679
OL810e $739
OL810e/PS $1065
OL1200 ..... $1075
OL1200PS $1305
OkiJet 2010 ..... $319
ML 320 ..... $315
ML 321 ..... $439
ML 590 ..... $439
ML 591 ..... $589
ML 184 TURBO $225
PACEMARK 3410 $1245

HEWLETT® PACKARD PRINTERS

Authorized Reseller

HP LaserJet 5L-FS Printer

HP LaserJet 5L-FS Printer $479
HP LaserJet 5P Printer $849
HP LaserJet 5MP Printer $999
HP DeskJet 340 Printer $289
HP DeskJet 340CV Printer $325
HP DeskJet 340CM Printer $305
HP DeskJet 600C Printer $245
HP DeskJet 680C Printer* $305
HP DeskJet 820CXI Printer $379
HP DeskJet 855CXI Printer $469
HP DeskJet 1600 Printer $1305
HP DeskJet 1600CM Printer $1899
HP OfficeJet LX Printer, Fax, Copier, Scanner ..... CALL
HP CopyJet Color Printer Copier ..... CALL
*Prints Banners

Canon

BJC-610 720x720 dpi

BJC-210 Color Bubble Jet 360 x 360 dpi ..... CALL
BJC-610 Color Bubble Jet 720 x 720 dpi ..... CALL
BJC-4100 Color Bubble Jet 720 x 360 dpi ..... CALL
BJC-70 Color Bubble Jet 360 x 360 dpi $355

EPSON®

Stylus Color II $299
Stylus Color IIS $205
Stylus Color Pro $465
Stylus Color ProXL $1799
LX 300 ..... $165
LQ 570+ $245
LQ 870 ..... $439
LQ 1070+ $379
LQ 1170 ..... $679
LQ 2170 ..... $599
LQ 2550 ..... $965
FX 870/FX 1170 ..... $285/$375
FX 2170 ..... $499
Stylus 1500 ..... $995

MONITORS

NEC

JC-1571VMA - 15XV 15+" $469
JC-1734VMA1 - 17XV 17+" $795
JC-1733VMA - 17XE 17" $995
JC-2131VMA - 21XE 21" ..... CALL
JC-1743UMA - 17 XP 17" $1029
JC-2143UMA - 21XP 21" ..... CALL

MAG INNOVISION

Mag Innovision DX1595 - 15" $375
Mag Innovision DX1795 - 17" $649
Mag Innovision MXE15F - 15" $449
Mag Innovision MXP17F -17" $829
Mag Innovision MX21F - 21" $1489

CTX

1562CLR 15" $329
1765GME 17" $619
1785GME 17" $675
2185S 21" $1559

Viewsonic

15GA W/Speakers $469
15GS $405
17GS $639
17GA W/Speakers $719
17EA W/Speakers $639
20G $1159
VS 21 PS2 ..... $1579

SONY

CPD - 15 SXI -15" $409
CPD - 15 SF2 -15" $465
CPD - 17 SF2 -17" $849
GDM -17 SE2T -17" $965
CPD -20SF2 - 20" ..... CALL

SAMSUNG

CMB5477L 15GLI 15" $405
CMA5377L 15GLe 15" $365
CMH7379L 17GLSI 17" $799
CMG7377L 17GLI 17" $649
CMG7387L 17GNe 17" $629
CFG9637L 20GLS 20" $1159

CD-ROMS/PCMCIAS

ALPS

P/N# 03-104080-00
Internal CD-ROM Changer ..... CALL

NEC

P/N# CDR-C251 4x4 CD Changer $289
P/N# CDR-C302 - 4XC $345
P/N# CDR-502 - 6XI $249
P/N# CDR-602 - 6XE $345

SONY

CSD-760E 4X Intl CD ROM Kit $129
CSD-760S 4X Intl SCSI CD ROM Kit $159
CSD-76SB 4X Int CD ROM Drive $139
CSD-7611M 4X Ext CD ROM $289
PRD-155SB CD ROM Discman Portable W/Snd Box ..... CALL

Megahertz

XJ1144 - 14.4 X-Jack Modem ..... CALL
XJ2144 - 14.4 X-Jack Gold Modem ..... CALL
XJ2288 - 28.8 X-Jack Modem ..... CALL
XJ3288 28.8/14.4X-Jack ..... CALL
XJ3288M 28.8/14.4X-Jack Cellular cable ..... CALL
XJ3144 14.4/14.4X-Jack ..... CALL
XJ3144M 14.4/14.4X-Jack Cellular cable ..... CALL
XJEM3288T 10 BASE T X-Jack ..... CALL
XJEM3288C 10 BASE T &10 BASE 2 X-Jack ..... CALL

US Robotics

000840-0 - Sportster 28.8 V.34 Int Fax Mdm $179
001013-0 - Sportster 28.8 PCMCIA Fax Mdm $299
000839-0 - Sportster 28.8 V.34 Ext Mdm $199

MOTOROLA

Montana 28.8 PCMCIA Modem/Fax Card w/cell $259
Manner 28.8 PCMCIA Modem/Fax Lan Adapter w/cell $419
Modem Surfer™ Fax Modem Internal $155
Modem Surfer™ Fax Modem External $169

Sunshine Computers
A Division Of INNOVATION COMPUTERS

Come and visit our NEW 30,000 sq ft Superstore in Deerfield Beach, Florida!
OPEN 7 DAYS A WEEK

1240 East Newport Center Dr.
Deerfield Beach, Florida 33442

1-800-828-2992

Hours: M-F 8am-8pm EST • Sat 10-6 • Sun 12-5

LEASES AS LOW AS $50 a month

LOOK FOR US ON THE World Wide Web http://www.sunshinec.com

FAX YOUR ORDER (954)422-5894 | OUTSIDE USA: (954)422-9680 | INTERNET: ginog@gate.net | WWW: http://www.sunshinec.com

THE FOLLOWING ALSO APPLIES: All items carry full manufacturers' warranty • All item are new and factory sealed • 15 day return policy & 30-day exchange • All items returned must include original packaging and documentation • No returns without RMA number • Shipping and handling are non refundable • Not responsible for typographical or printing errors • Software is not returnable • All printers are non refundable

Attention: Due To On-Going Price Updates of Notebook & Laptop Computers... CALL For Current Pricing and Availability

PCW 0696

Circle 196 on reader service card

FREE PRODUCT INFORMATION PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

INFORMATION FROM ADVERTISERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520

☐ Check here for a 1-year (12 issue) subscription (U.S. only). You will be billed $19.97.

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (413) 637-4343.

PRODUCTS FEATURED IN EDITORIAL

601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900

PRODUCT CATEGORY INFORMATION

6/96

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

Editorial Features (see article for numbers)

901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920

Advertised Products

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

June 1996 This card expires October 22, 1996 N1

Free Product Information

For quicker response, fax to (413) 637-4343.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 758 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Product Information Center
P.O. Box 5330
Pittsfield, MA 01203-9871

FREE PRODUCT INFORMATION PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

INFORMATION FROM ADVERTISERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520

☐ Check here for a 1-year (12 issue) subscription (U.S. only). You will be billed $19.97.

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (413) 637-4343.

PRODUCTS FEATURED IN EDITORIAL

601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900

PRODUCT CATEGORY INFORMATION

6/96

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

Editorial Features (see article for numbers)

901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920

Advertised Products

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

June 1996 This card expires October 22, 1996 N3

Free Product Information

For quicker response, fax to (413) 637-4343.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 758 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Product Information Center
P.O. Box 5330
Pittsfield, MA 01203-9871

FREE PRODUCT INFORMATION PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

INFORMATION FROM ADVERTISERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520

☐ Check here for a 1-year (12 issue) subscription (U.S. only). You will be billed $19.97.

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (413) 637-4343.

PRODUCTS FEATURED IN EDITORIAL

601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900

PRODUCT CATEGORY INFORMATION

6/96

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

Editorial Features (see article for numbers)

901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920

Advertised Products

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

June 1996 This card expires October 22, 1996 N2

Free Product Information

For quicker response, fax to (413) 637-4343.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 758 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Product Information Center
P.O. Box 5330
Pittsfield, MA 01203-9871

FREE CD PLUS 63% OFF

☐ **YES. Send me PC WORLD and my free CD-ROM!**
I'll pay just $21.97 for 12 monthly issues–63% off the annual newsstand rate.
Plus, I'll receive the exclusive PC WORLD *Shareware CD-ROM* loaded with valuable shareware absolutely FREE.

NAME

COMPANY

ADDRESS

CITY/STATE/ZIP

Please allow 6-8 weeks for delivery of your first issue. Canadian orders please add $20 USD per subscription for postage plus 7% GST (#R124669680). All other countries send $65.97 USD to PC World, P.O. Box 55029, Boulder CO 80322-5029. Printed in the USA. Savings based on newsstand rate of $59.40.

4MJC1

Please Accept Your FREE GIFT!

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Subscription Department
P.O. Box 51833
Boulder, CO 80323-1833

PC WORLD

PRESIDENT & COO Richard J. Marino

Assistant to the President & COO Colette Cornish

PUBLISHER J. Samuel Huey

ADVERTISING SALES

Vice President, Associate Publisher
Jeff Edman

Business Manager
Patricia Owen

Director of Advertising
Bob Carrigan

Assistant to the Director of Advertising
Jane Davey

Director of National Accounts
Sandy Schackman (214/233-3491)

EAST

Eastern Advertising Director
Bob Ostrow (508/820-0440)

Administrative Assistant/Office Manager
Ellen Sanderson

Mid-Atlantic/Manhattan/Eastern Canada
John Grogan, Mid-Atlantic Advertising Manager (201/587-0090)

Wayne Silverman, Account Manager (201/587-0090)

New England/Ohio
Michael Carroll, Senior Account Manager (508/820-0440)

Southeast
Judy Sutter, Senior Account Manager (770/394-0758)

East & Midwest
Jeff Kamikow, Account Representative (847/827-4477)

MIDWEST/TEXAS

Midwest Advertising Director
Harvey Diamond (214/233-3492)

Administrative Assistant Janine Goble

Midwest
Kathy McKay, Account Manager (847/827-4477)

WEST

San Francisco Bay Area (area code 415 & 510)
Corinne Cox, Senior Account Manager (415/243-0500)

Silicon Valley (area code 408)/Oregon
William M. Giller, Senior Account Manager (415/243-0500)

Fremont, CA/Silicon Valley
Kevin Normandeau, Account Manager (415/243-0500)

West
Diane Hampson, Account Representative (415/243-0500)

Southern California (San Diego), Colorado/Idaho/Nevada/Utah/New Mexico/Arizona
Lisa Zimmerer, Senior Account Manager (714/250-8081)

Los Angeles/Orange County/Washington/Montana/Wyoming/Western Canada
Bill Hanck, Senior Account Manager (310/312-8008)

CONSUMER ADVERTISING SALES

Michigan/Pennsylvania/Ohio
Hartle & Heth (810/642-7273)

PC WORLD ONLINE SALES

Director of Market Development
Stephen Shore (415/267-4595)

PC WORLD MARKETPLACE
PC WORLD ACTION CARDS

Director
Pat Fales (203/857-5115)

Eastern Account Manager
Katherine Noto (203/857-5101)

Western Account Manager
Barbara Sweetman (203/857-5102)

PC WORLD REPRINTS

Kyle Mork (612/582-3810)

PC WORLD MARKETING

Director of Marketing Alan Abrams

Public Relations Manager Lee Doyle

Marketing Manager Sandy Wong

Administrative Assistant for Marketing and Research Kecia Nordgren

CIRCULATION, RESEARCH

Vice President, Circulation
Shawne Burke Pecar

Assistant to the Vice President
Ann Dempsey

Senior Promotion Manager
Ellen DiMatteo

Circulation Business Manager
David Cobb

Single Copy Sales Manager
Cheryl Stephenson

Billing & Renewal Manager Lisa Radler

Promotion Managers Richard McCarthy, Shira Weisbach

Circulation Assistant Jennifer Carson

Customer Service Specialist
Daniella Zucker

Vice President, Research Cheryl Brink

Research Managers Jocelyn Ritchie, Maryann Thompson

Research Analyst Jon Friesch

PRODUCTION

Vice President, Manufacturing
Linda Manes Goodwin

Senior Production Manager
Nadia Maudsley

Advertising Information Manager
Mike Wallace

Assistant Production Managers
Kathy Badertscher, Nancy Jonathans

Advertising Production Coordinator
Anne Merkelson

Advertising Information Assistant
Dan Gordon

HUMAN RESOURCES AND INFORMATION SYSTEMS

Vice President Richard Willoughby

Manager Thalia Ohara

Representative Christine Selfridge

Director Network Systems
Norman Noble

Senior Member, Technical Staff
Rodney Barnes

Members, Technical Staff
Pearl Chan, Stan Erhart

ADMINISTRATION

Vice President, CFO Vicki Peilen

Corporate Business Manager
Christina Spence

Accounting/Operations Manager
Pat Murphy

Accounting/Facilities Manager
Michelle Reyes

Director of Financial Operations
Madeleine Buckingham

Assistant to the CEO Nancy L. Jacobs

Management Associates
Michael L. Bayle, Peter Keith, Ulla McGee

Advertiser Index A-Z

Get more information—circle the appropriate number on the reader service card.

Reader Service Number		Page Number
4	3M Data Storage	144-145
7	3M Visual Systems Division	239
–	Acer Direct	60-62
–	Adaptec	20
–	Adaptec	234
–	ADI Systems	30
12	Adobe Systems, Inc.	94-95
14	AEC	277
9	ALR	140
27	AMS Inc.	148
–	Anthro Corporation	32
45	APC	80-81
8	Arlington Computer Products	296-297
21	ARTISOFT	257
6	AST RESEARCH	218-219
24	Aura Systems, Inc.	275
–	Austin/IPC Technologies	232A-D
–	Autodesk	129
31	Avery	201
91	Caere	59
–	Canon Computer Systems	2-3
40	CARDIFF SOFTWARE, INC.	327
65	Casio, Inc.	169
44	Cisco Systems, Inc.	202-203
–	Claris	174-175
–	COMDEX/Spring 1996	161
61	Compaq Computer Corp.	27
–	Compaq Direct Plus	71
–	Compaq Direct Plus	73
68	Computer Discount Warehouse	300-303
86	Connectix	273
70	Corel Corporation	4-5
76	Corel Corporation	147
78	Corel Corporation	243
48	Corel Corporation	319
63	Corel Corporation	323
49	Corel Corporation	325
67	Corel Corporation	329
56	Creative Labs	107
54	Creative Labs	109

PC World is a publication of International Data Group, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. International Data Group publishes over 190 computer publications in 62 countries. Forty million people read one or more International Data Group publications each month. International Data Group's publications include: **ARGENTINA**'s Computerworld Argentina, Infoworld Argentina; **ASIA**'s Computerworld Hong Kong, Computerworld Malaysia, Computerworld Southeast Asia, PC World Hong Kong, PC World Malaysia, PC World Singapore; **AUSTRALIA**'s Australian Macworld, Australian PC World, Computerworld Australia, IDG Sources, Network World, Reseller; **AUSTRIA**'s Computerwelt Oesterreich, PC Test; **BRAZIL**'s Computerworld, Mundo IBM, Mundo Unix, PC World, Publish; **BULGARIA**'s Computerworld Bulgaria, Ediworld, PC & Mac World Bulgaria; **CANADA**'s Direct Access, Graduate Computerworld, InfoCanada, Network World Canada; **CHILE**'s Computerworld, Informática; **COLOMBIA**'s Computerworld Colombia; **CZECH REPUBLIC**'s Computerworld, Elektronika, PC World; **DENMARK**'s CAD/CAM World, Communications World, Computerworld Danmark, Lotus World, Macintosh Produktkatalog, Macworld Danmark, PC World Danmark, PC World Produktguide, Windows World; **ECUADOR**'s PC World; **EGYPT**'s Computer World (CW) Middle East, PC World Middle East; **FINLAND**'s MikroPC, Tietoverkko, Tietoviikko; **FRANCE**'s Distributique, Golden Mac, InfoPC, Languages & Systems, Le Guide du Monde Informatique, Le Monde Informatique, Télécoms & Reseaux; **GERMANY**'s Computerwoche, Computerwoche Extra, Computerwoche Focus, Computerwoche Karriere, Information Management, Macwelt, Netzwelt, PC Welt, PC Woche, Publish, Unit; **HUNGARY**'s Alaplap, Computerworld SZT, PC World; **INDIA**'s Computers & Communications; **ISRAEL**'s Computerworld Israel, PC World Israel; **ITALY**'s Computerworld Italia, Lotus Magazine, Macworld Italia, Networking Italia, PC World Italia; **JAPAN**'s Computerworld Japan, Macworld Japan, SunWorld Japan, Windows World; **KENYA**'s East African Computer News; **KOREA**'s Computerworld Korea, Macworld Korea, PC World Korea; **MEXICO**'s Compu Edicion, Compu Manufactura, Computacion/Punto de Venta, Computerworld Mexico, MacWorld, Mundo Unix, PC World, Windows; **THE NETHERLANDS**' Computer! Totaal, LAN Magazine, MacWorld; **NEW ZEALAND**'s Computer Listings, Computerworld New Zealand, New Zealand PC World; **NIGERIA**'s PC World Africa; **NORWAY**'s Computerworld Norge, C/World, IDG Direct Response, Lotusworld Norge, Macworld Norge, Networld, PC World Ekspress, PC World Norge, PC World's Product Guide, Publish World, Student Data, Unix World, Windowsworld; **PANAMA**'s PC World; **PEOPLE'S REPUBLIC OF CHINA**'s China Computerworld, China Network World, Electronics International, PC World China; **IDG HIGH TECH BEIJING**'s New Product World; **IDG SHENZHEN**'s Computer News Digest; **PERU**'s Computerworld Peru, PC World; **PHILIPPINES**' Computerworld, PC World; **POLAND**'s Computerworld Poland, PC World/Komputer; **PORTUGAL**'s Cerebro/PC World, Correio Informatico/Computerworld, MacIn; **ROMANIA**'s PC World; **RUSSIA**'s Computerworld Moscow, Mir-PC, Sety; **SLOVENIA**'s Monitor Magazine; **SOUTH AFRICA**'s Computing S.A., **SPAIN**'s Amiga World, Computerworld España, Comunicaciones World, Macworld España, NeXTworld, PC World España, Publish, Sunworld; **SWEDEN**'s Attack, ComputerSweden, Corporate Computing, Datalngenjoren, Lokala Natverk/LAN, Lotus World, MAC&PC, Macworld, Maxi Data, Mikrodatorn, PC World, Publishing & Design (CAP), Windows World; **SWITZERLAND**'s Computerworld Schweiz, Macworld Schweiz, PC & Workstation; **TAIWAN**'s Computerworld Taiwan, Global Computer Express, PC World Taiwan; **THAILAND**'s Thai Computerworld; **TURKEY**'s Computerworld Monitor, Macworld Turkiye, PC World Turkiye; **UKRAINE**'s Computer World; **UNITED KINGDOM**'s Lotus Magazine, Macworld, Sunworld, **UNITED STATES**' AmigaWorld, Cable in the Classroom, CD Review, CIO, Computerworld, Desktop Video World, DOS Resource Guide, Electronic News, Federal Computer Week, Federal Integrator, GamePro, IDG Books, Infoworld, Infoworld Direct, Laser Event, Macworld, Multimedia World, Network World, NeXTworld, PC Games, PC Letter, PC World, Publish, Sumena, SunWorld, SWATPro, Video Event; **VENEZUELA**'s Computerworld Venezuela, MicroComputerworld Venezuela **VIETNAM**'s PC World Vietnam.

Index

Reader Service Number		Page Number
–	Crosstalk/Attachmate	283
74	CTX Int'l	181
–	Cyber Business 2000	209
–	Cyrix Corporation	208A-F
77	DacEasy, Inc.	259
79	Datastorm	261
81	Dataviz, Inc.	267
–	Dell	18-19
–	Dell	44-45
–	Dell	85
–	Dell	110-111
–	Dell	153
–	Dell	C5-8
82	Digital Equipment Corp.	253
107	Everex	171
89	Fujitsu	206-207
103	FUJITSU MICROELECTRONICS	103
–	Gateway 2000	33-41
–	Hewlett-Packard JetDirect	115
–	Hewlett-Packard Laserjet	24
–	Hewlett-Packard PC	147A-B
125	Hitachi	76-77
109	Hitachi	79
–	IBM Direct	113
–	Intel	125
106	Intergraph Software	83
170	KDS	195
156	KeyStone Learning Systems	309
128	Kingston Technology	173
133	Knight-Ridder Information	276
–	LA TRADE	307
96	LG Electronics U.S.A., Inc.	245
–	Logitech	126
142	Mannesmann Tally	151A
147	Mega Haus Hard Drives	306
138	MEGAHERTZ CORPORATION	104-105
182	Micrografx	65
153	MicroHelp	67
149	Micron Electronics	8-11
149	Micron Electronics	133-139
–	Microsoft	116-117
–	Microsoft	118-119
–	Microsoft	196-197
155	Midwest Computer Works	304-305
154	MultiVideo Labs, Inc.	282
203	NEC	28-29
205	NEC Monitors	C2-P1
176	NEC PGG	22-23
126	NETCOM	213
158	NewSoft	42
–	Nokia	15
–	NOVELL	264A-D
–	NRI Schools	281
–	Okidata	189
167	Ositech Communications, Inc.	151B
173	Palm Computing Division	205
195	PC America	326
–	PC Connection	246-247
–	PC Expo '96	233
172	PC World Online	279
161	PC Zone	298-299
129	PCs Compleat	310-311
223	Peachtree Software	255
145	Pinnacle Micro	69
177	Pipeline USA	271
212	PKWARE	251
175	Plextor	216
191	Practical Peripherals	87
151	Princeton Graphic Systems	227
–	Quantex	89-93
225	Quarterdeck Office Systems	53
185	Quarterdeck Office Systems	55
190	Quarterdeck Office Systems	57
209	Seagate	241
–	Sharp Electronics	155-160
199	SIMPLE TECHNOLOGY	165
200	SL Waber	199
206	SMILE, Int'l	231
253	SPSS, Inc.	280
210	STB Systems	214
196	Sunshine Computers	312
214	Swan Technology	268-269
226	TDK Systems	193
124	Tektronix	179
220	Texas Instruments	228-229
–	Toray Marketing & Sales	265
228	TOSHIBA	130-131
234	TouchStone SW Corp.	263
237	Toyota Motor Sales	75
–	Toyota Motor Sales	26
239	TRAVELING SW	274
–	Unisys Corporation	182-183
231	USA Flex	308
224	ViewSonic	187
–	VISIO	190-191
187	Visioneer	13
254	WinBook	16-17
248	Xerox Corporation	210

Advertiser Index by Product Category

Get more information—circle the appropriate number on the reader service card.

HARDWARE

Boards/Cards/Chips

24	Aura Systems, Inc.	275
56	Creative Labs	107
103	FUJITSU MICROELECTRONICS	103
–	Intel	125
128	Kingston Technology	173
199	SIMPLE TECHNOLOGY	165
210	STB Systems	214
226	TDK Systems	193

Communications/Fax/Modems

138	MEGAHERTZ CORPORATION	104-105
167	Ositech Communications, Inc.	151B
191	Practical Peripherals	87

Computers

9	ALR	140
27	AMS Inc.	148
–	Austin/IPC Technologies	232A-D
–	Compaq Direct Plus	73
–	Cyrix Corporation	208A-F
–	Dell	18-19
–	Dell	44-45
–	Dell	85
–	Dell	110-111
–	Dell	153
–	Gateway 2000	33-41
–	Hewlett-Packard PC	147A-B
149	Micron Electronics	133
149	Micron Electronics	134-139
–	Quantex	89-93
–	Unisys Corporation	182-183

Desktop Publishing

6	AST RESEARCH	218-219
–	Dell	C5-8

File Servers

61	Compaq Computer Corp.	27
149	Micron Electronics	133
149	Micron Electronics	134-139

Laptop/Notebook

–	Acer Direct	60-62
27	AMS Inc.	148
–	Austin/IPC Technologies	232A-D
–	Compaq Direct Plus	71
–	Dell	18-19
–	Dell	44-45
107	Everex	171
–	Gateway 2000	33-41
125	Hitachi	76-77
109	Hitachi	79
–	IBM Direct	113
149	Micron Electronics	8-11
203	NEC	28-29
173	Palm Computing Division	205
–	Sharp Electronics	155-160
214	Swan Technology	268-269
220	Texas Instruments	228-229
228	TOSHIBA	130-131
254	WinBook	16-17

Local Area Networks

44	Cisco Systems, Inc.	202-203

Monitors/Displays

7	3M Visual Systems Division	239
–	ADI Systems	30
74	CTX Int'l	181
170	KDS	195
96	LG Electronics U.S.A., Inc.	245
154	MultiVideo Labs, Inc.	282
205	NEC Monitors	C2-P1
–	Nokia	15
151	Princeton Graphic Systems	227
206	SMILE, Int'l	231
224	ViewSonic	187

Multimedia

7	3M Visual Systems Division	239
65	Casio, Inc.	169
54	Creative Labs	109
175	Plextor	216
214	Swan Technology	268-269
–	Toray Marketing & Sales	265
–	Toyota Motor Sales	26

Other

65	Casio, Inc.	169

Power/Protection

45	APC	80-81
200	SL Waber	199

Printers

–	Canon Computer Systems	2-3
–	Hewlett-Packard JetDirect	115
–	Hewlett-Packard Laserjet	24
142	Mannesmann Tally	151A
–	Okidata	189
124	Tektronix	179

Peripheral/Sharing Devices

–	Adaptec	20
–	Adaptec	234
239	TRAVELING SW	274

Storage/Backup Devices

89	Fujitsu	206-207
147	Mega Haus Hard Drives	306
145	Pinnacle Micro	69
209	Seagate	241
–	Toray Marketing & Sales	265

Scanners/Digitizers

–	Logitech	126
187	Visioneer	13

Systems

196	Sunshine Computers	312
–	Unisys Corporation	182-183

SOFTWARE

Accounting/Financial

77	DacEasy, Inc.	259
223	Peachtree Software	255

CAD/CAM

–	Autodesk	129
106	Intergraph Software	83

Communications/Fax/Modems

21	ARTISOFT	257
–	Crosstalk/Attachmate	283
79	Datastorm	261
126	NETCOM	213

Database Management

–	Claris	174-175

Dataconversion

81	Dataviz, Inc.	267

Education

48	Corel Corporation	319
63	Corel Corporation	323
49	Corel Corporation	325
67	Corel Corporation	329

Entertainment

48	Corel Corporation	319
63	Corel Corporation	323
49	Corel Corporation	325
67	Corel Corporation	329

Index

Reader Service Number — Page Number

Graphics
12 Adobe Systems, Inc. 94-95
76 Corel Corporation 147
78 Corel Corporation 243
182 Micrografx 65
– VISIO 190-191

Local Area Network
44 Cisco Systems, Inc. 202-203

Management
133 Knight-Ridder Information 276
195 PC America 326

Optical Character Recognition
91 Caere 59
40 CARDIFF SOFTWARE, INC. 327
158 NewSoft 42

Presentation Graphics
– Microsoft 116-117
– Microsoft 118-119
176 NEC PGG 22-23

Operating Systems
82 Digital Equipment Corp. 253

Spreadsheet/Templates/Forms
40 CARDIFF SOFTWARE, INC. 327

Statistics
253 SPSS, Inc. 280

Software Suite
70 Corel Corporation 4-5
– Microsoft 196-197

Utilities
14 AEC 277
153 MicroHelp 67
158 NewSoft 42
212 PKWARE 251
225 Quarterdeck Office Systems 53
185 Quarterdeck Office Systems 55
190 Quarterdeck Office Systems 57
234 TouchStone SW Corp. 263

Video
86 Connectix 273
156 KeyStone Learning Systems .. 309

Windows
14 AEC 277
– Crosstalk/Attachmate 283
77 DacEasy, Inc. 259
79 Datastorm 261
106 Intergraph Software 83
153 MicroHelp 67
223 Peachtree Software 255
212 PKWARE 251

Word Processing/Aids
70 Corel Corporation 4-5

MISCELLANEOUS

Computer Accessories
4 3M Data Storage 144-145

Mail Order
8 Arlington Computer Products 296-297
68 Computer Discount Warehouse 300-303
– LA TRADE 307
147 Mega Haus Hard Drives 306
155 Midwest Computer Works 304-305
– NRI Schools 281
– PC Connection 246-247
161 PC Zone 298-299
129 PCs Compleat 310-311
196 Sunshine Computers 312
231 USA Flex 308

Online Services
133 Knight-Ridder Information 276
172 PC World Online 279
177 Pipeline USA 271

Other
– Anthro Corporation 32

Service/Support
31 Avery 201
– NOVELL 264A-D

Supplies
31 Avery 201
200 SL Waber 199
248 Xerox Corporation 210

Trade Shows
– COMDEX/Spring 1996 161
– PC Expo '96 233

Training
– Cyber Business 2000 209
156 KeyStone Learning Systems .. 309

Products Featured in Editorial

Get more information—circle the appropriate number on the reader service card.

Add-On Board
618 ATI Video Xpression, ATI 223
699 Diamond Stealth 3D 2200; Diamond Stealth64 Video 2201TV; Diamond Multimedia 68
614 Diamond Stealth64 Video 2201XL, Diamond Multimedia 223
660 Diamond Stealth64 Video 3200, Diamond Multimedia 230
616 Hercules Stingray 64/Video, Hercules 223
612 Hercules Terminator 64/Video, Hercules 223
613 Hercules Terminator Professional, Hercules 223
610 Matrox MGA Millennium, Matrox 223
692 miroVideo DC20, miro Computer Products 68
617 Number Nine 9FX Motion771, Number Nine 223
611 STB Powergraph 64 Video, STB 223
615 STB Velocity 64 Video, STB 223
619 VideoLogic GrafixStar 700, VideoLogic 223

Antivirus Software
669 Dr. Solomon's Anti-Virus ToolKit for Windows 95, S&S Software 114
– IBM AntiVirus, IBM 114
674 Norton Antivirus, Symantec 114
676 PC-cillin 95, Touchstone Software 114
682 ThunderByte Anti-Virus Utilities, ThunderByte 114
683 VirusScan, McAfee 114

Business Software
658 P/E - Interactive Research for the Serious Investor, DecisionWare 78

Children's Software
704 A to Zap, Sunburst Communications 324
703 The Muppets CD-ROM: Muppets Inside, Starwave 324

CPU Upgrade
656 Evergreen 586, Evergreen Technologies 88

Database Utility
696 Corel Web.Data 6.0, Corel 72

Desktop Computer
732 Acma zPower 133, Acma Computers 167
786 Acma zPower 166, Acma Computers 194
787 Alaris P-133, Alaris 194
788 Amax Power Station P-166F, Amax Engineering 194
789 AST Bravo MS-T P/100, AST Computers 194
744 Austin PowerPlus 75, Austin Direct 177
721 Austin PowerPlus 133, Austin Direct 167
687 Canon Innova Media MT 9600, Canon Computer Systems 63
724 Compaq Deskpro 5133, Compaq 167
722 Compaq Deskpro XL 5133, Compaq Computer 167
711 Compaq Presario 9240, Compaq Computer 328
710 Compaq Presario 9250, Compaq Computer 328
720 Compaq ProLinea 5100 Compaq Computer 167
743 Compaq ProLinea 575e, Compaq Computer 177
742 CompuTrend Premio 5x86-100, CompuTrend Systems 177
790 CompuTrend Premio Triton P-166, CompuTrend Systems 194
783 Cyrix 6x86 PCs, Cyrix Systems Direct 52
791 Data Storage DataStor P5-133, Data Storage Marketing 198
733 Dell Dimension XPS P100c, Dell Computer 177
713 Dell Dimension XPS P133c, Dell Computer 167
738 Dell OptiPlex GL+575, Dell Computer 177
716 Dell OptiPlex GXMT 5133, Dell Computer 167
739 Diamond DT-100, Diamond Technologies 177
719 Digital Celebris GL 5166ST, Digital Equipment 167
741 Digital Venturis 575, Digital Equipment 177
735 DTK Quin 54M/P100, DTK Computer 177
725 DTK Quin 54M/P133, DTK Computer 167
737 Gateway 2000 P5-75, Gateway 2000 177
723 Gateway 2000 P5-133, Gateway 2000 167
727 Gateway 2000 P5-133XL, Gateway 2000 167
746 HiQ Saturn Station, HiQuality Computer Systems 177
709 HP Pavilion 7130P, Hewlett-Packard 328
718 HP Vectra VL Series 4 5/166MT, Hewlett-Packard 167
– IBM PC 330, IBM 198
792 Micro Express MicroFlex-86/P150+, Micro Express 198
793 Micro Express MicroFlex-86/P166+, Micro Express 198
748 Micro Express MicroFlex-PCI/5133, Micro Express 177
708 Micron Home MPC Pro, Micron Electronics 328
714 Micron P133 Millennia, Micron Electronics 167
715 Micron P166 Millennia Plus, Micron Electronics 167
794 MultiWave Ultra Power P-166, Multiwave Technology Inc 198
717 NEC PowerMate P-133, NEC Technologies 167
688 NEC Ready 9619, NEC Technologies 63, 328
731 Netis N166 Home Office, Netis Technology 167
745 Netis N5100 Media, Netis Technology 177
751 NMC Expert System, National Microcomputers 177
795 Packard Bell Platinum Pro, Packard Bell 198
729 PerComp Professional P150, PerComp Microsystems 167
750 Polywell Poly 4120P8, Polywell Computer 177
726 Polywell Poly 5166P8, Polywell Poly 167
740 Quantex QP5/100 M-3, Quantex Microsystems 177
796 Quantex QP5/133 M-4, Quantex Microsystems 198
747 Swan Pentium 75 Series, Swan Technologies 177
730 Swan PowerHouse P-166, Swan Technologies 167
752 Tangent MediaStar 5133/95, Tangent Computer 177
728 Tangent MediaStar 5166/95, Tangent Computer 167
797 Tangent P-166, Tangent Computer 198

Index

Reader Service Number — Page Number

798 Tempest 686 SuperMedia 100, Tempest Computer..... 198
736 Tempest Pentium Giga Media P5-100, Tempest Micro..... 177
749 USA Flex Home/Office PT-120 Multimedia, USA Flex..... 177
734 Vektron Multimedia P-100, Vektron..... 177
799 Zenon Dream Media P166, Zenon Technology..... 198

Desktop Publishing

695 Interleaf 6 Windows 95 and Windows NT, Interleaf..... 72

Disk Drive

691 HP SureStore 1300A, 2000A; Hewlett-Packard..... 66

Display

623 ArtMedia TX1664, ArtMedia..... 215
630 Dell UltraScan 15TX, Dell Computer..... 215
621 Mitsubishi Diamond Scan 15HX, Mitsubishi..... 215
622 NEC MultiSync XV15+, NEC Technologies..... 215
625 Panasonic PanaMedia15, Panasonic..... 215
628 Samsung SyncMaster 15GLi, Samsung..... 215
624 Smile CA1516SL, Smile..... 215
629 Sony Multiscan 15sfII, Sony Electronics..... 215
627 ViewSonic 15G, ViewSonic..... 215
626 ViewSonic 15GA, ViewSonic..... 215

E-Mail

644 cc:Mail Release 6.0, Lotus Development..... 82

Entertainment/Game

701 Bad Mojo, Pulse Entertainment..... 322
702 Connections: It's a Mind Game, Discovery Channel Multimedia..... 324
706 Masterpiece Mansion, Philips Media Software..... 324
705 The Dark Eye, Inscape..... 324

Fax-Modem

646 28.8 Communicator With SimpleJack, Simple Technology..... 84
640 Cardinal Technologies MVP288XV, Cardinal..... 217
635 Hayes Optima 288 V.34+FAX for PCMCIA With EZjack, Hayes Microcomputer Products..... 217
634 Megahertz Corp XJ2288, Megahertz..... 217
636 Microcom DeskPorte 28.8P, Microcom..... 217
639 Microcom DeskPorte Fast V.34, Microcom..... 217
632 Microcom TravelCard 28.8P, Microcom..... 217
637 Motorola ISG Lifestyle 28.8, Motorola..... 217
633 MultiTech Systems MultiModem LT, MultiTech..... 217

638 U.S. Robotics Sportster V.34 Faxmodem, U.S. Robotics..... 217
631 Zoom V.34C Model 520, Zoom Telephonics..... 217

Graphics

648 Poser 2.0, Fractal Design..... 86

Input Device

653 GlidePoint WaveKeyboard, Cirque..... 88

Internet Tool

808 Digiphone, Third Planet Publishing..... 49
– FreeTel, FreeTel Communications..... 49
809 Internet Phone, VocalTec..... 49
810 Jabra-Net, Jabra..... 49
811 WebTalk, Quarterdeck..... 49

LAN Peripheral

645 Instant Internet 3.0, Performance Technology..... 82

Miscellaneous

620 Westinghouse Security Electronics..... 32
647 AirCommunicator Lite, Air Communications..... 84
654 FlashPoint LT PCI, BusLogic..... 88
649 Maxmedia TV/Pro II, Umax Technologies..... 86
805 SIMM converter, SimmSaver..... 278
806 SIMM converter, Autotime..... 278
807 UPS, American Power Conversion..... 282

Notebook Computer

800 Acom Patriot 8000I, Acom..... 198
771 AST Ascentia 950N AST Computer..... 185
801 Canon Innova Book 175C, Canon Computer Systems..... 198
762 Dell Latitude LX 4100D, Dell Computer..... 185
765 Dell Latitude XPi P75D, Dell Computer..... 185
755 Dell Latitude XPi P120ST, Dell Computer..... 185
802 Eurocomm 5400T, Eurocomm..... 198
754 Gateway 2000 Solo S5-90XL, Gateway 2000..... 185
768 Hertz Z-Optima 486 D100X4E, Hertz Computer..... 185
– IBM ThinkPad 365, IBM..... 204
– IBM ThinkPad 365e, 365x; IBM..... 64
– IBM ThinkPad 760C, IBM..... 185
803 Magitronic P120/600 Series, Magitronic..... 204
766 Mega Image MegaBook 880, Mega Image..... 185
767 MidWest Micro SoundBook II, MidWest Micro..... 185
770 NEC Versa 2000C, NEC Technologies..... 185
760 NEC Versa 4080H, NEC Technologies..... 185
759 Sager P-120, Sager Midern Computer..... 188
769 Sharp PC 3020, Sharp Electronics..... 185

761 Texas Instruments TravelMate 5100, Texas Instruments..... 185
758 Toshiba Portégé 610CT, Toshiba America Information Systems..... 185
763 Toshiba Satellite 100CS, Toshiba America Information Systems..... 185
757 Toshiba Satellite Pro 4000CDT, Toshiba America Information Systems..... 185
764 Toshiba Satellite T2130CS, Toshiba America Information Systems..... 185
756 Toshiba Tecra 700CT, Toshiba America Information Systems..... 185
804 WinBook XP5-P75 NB, WinBook..... 204
753 WinBook XP5 P120, WinBook..... 185

OCR Software

693 OmniPage Pro for Windows 95, Caere..... 70
694 TextBridge Pro 96, Xerox..... 70

Online Service

785 Wow, CompuServe..... 56

Operating System

673 Windows 95, Microsoft..... 114

Printer

609 Canon BJC-610, Canon Computer Systems..... 211
608 Canon BJC-4100, Canon Computer Systems..... 211
– Epson Stylus Color II, Epson America..... 211
607 HP DeskJet 680C, Hewlett-Packard..... 211
606 HP DeskJet 820Cse, Hewlett-Packard..... 211
782 HP LaserJet 5, 5N, and 5M; Hewlett-Packard..... 52
602 NEC SuperScript 660, NEC Technologies..... 211
689 NEC SuperScript 860, NEC Technologies..... 64
601 Panasonic KX-P6100, Panasonic..... 211
604 Panasonic KX-P6500, Panasonic..... 211
605 TI microLaser Win/4, Texas Instruments..... 211

Project Management

652 Flow Charting PDQ, Patton & Patton Software..... 88
698 ProcessModel 2.0, ProModel..... 74

Reference

681 Encarta Encyclopedia '96, Bookshelf '95, Encarta World Atlas '96; Microsoft..... 244
677 1996 Grolier Multimedia Encyclopedia, The Multimedia Encyclopedia of Science Fiction; Grolier Interactive..... 244
678 ABC World Reference 3D Atlas, Creative Wonders/ Electronic Arts..... 244
679 Cognito Student Research, Information Access Company..... 244

680 Compton's Interactive Encyclopedia, Compton's Reference Collection; Compton's NewMedia..... 244
686 Encyclopaedia Britannica, Encyclopaedia Britannica..... 244
683 Japanese To Go, Creative Multimedia..... 244
684 Multipedia, SoftKey International..... 244
685 Our Times Multimedia Encyclopedia of the 20th Century, Vicarious..... 244
682 The Guinness Encyclopedia, Wayzata Technology..... 244
707 Wizard of Dogs, WildWwood Interactive..... 324

Remote Control/Access

672 LapLink for Windows 95, Traveling Software..... 114

Removable Storage

690 Iomega Ditto Easy 3200, Iomega..... 66

Scanner

700 Scanpaq Page DS, Scanpaq..... 322

Software Suite

784 Corel WordPerfect Suite 7 for Windows 95, Corel Office Professional, Corel..... 54

Utility

667 CleanSweep 95, Quarterdeck..... 114
668 Dashboard 3.0, Starfish Software..... 114
650 Drag And File Gold for Windows 95/NT, Canyon Software..... 86
651 Expert Choice 9.0, Expert Choice..... 86
642 File-Ex, Cottonwood Software..... 330
670 First Aid 95, CyberMedia..... 114
671 Keyview, FTP Software..... 114
673 Microsoft Plus, Microsoft..... 114
674 Norton Utilities for Windows 95, Symantec..... 114
675 PC Care for Windows 95, American Megatrends..... 114
677 PowerDesk, MicroHelp..... 114
667 QEMM 8, Quarterdeck..... 114
679 Qualitas Max 8, Qualitas..... 114
680 Remove-It for Windows 95, Vertisoft..... 114
643 SmartBoard, Keyboard Express; Insight Software Solutions..... 330
697 Smart Marketing Suite, Group 1 Software..... 74
681 Stacker 4.1, Stac..... 114
677 Uninstaller 3.5 for Windows 95, MicroHelp..... 114
684 WinCheckIt 4, Touchstone Software..... 114
667 WinProbe 4, Quarterdeck..... 114
685 WinZip, Nico Mak Computing..... 114

Web Publishing

655 QuickSite, DeltaPoint..... 88

Web Site

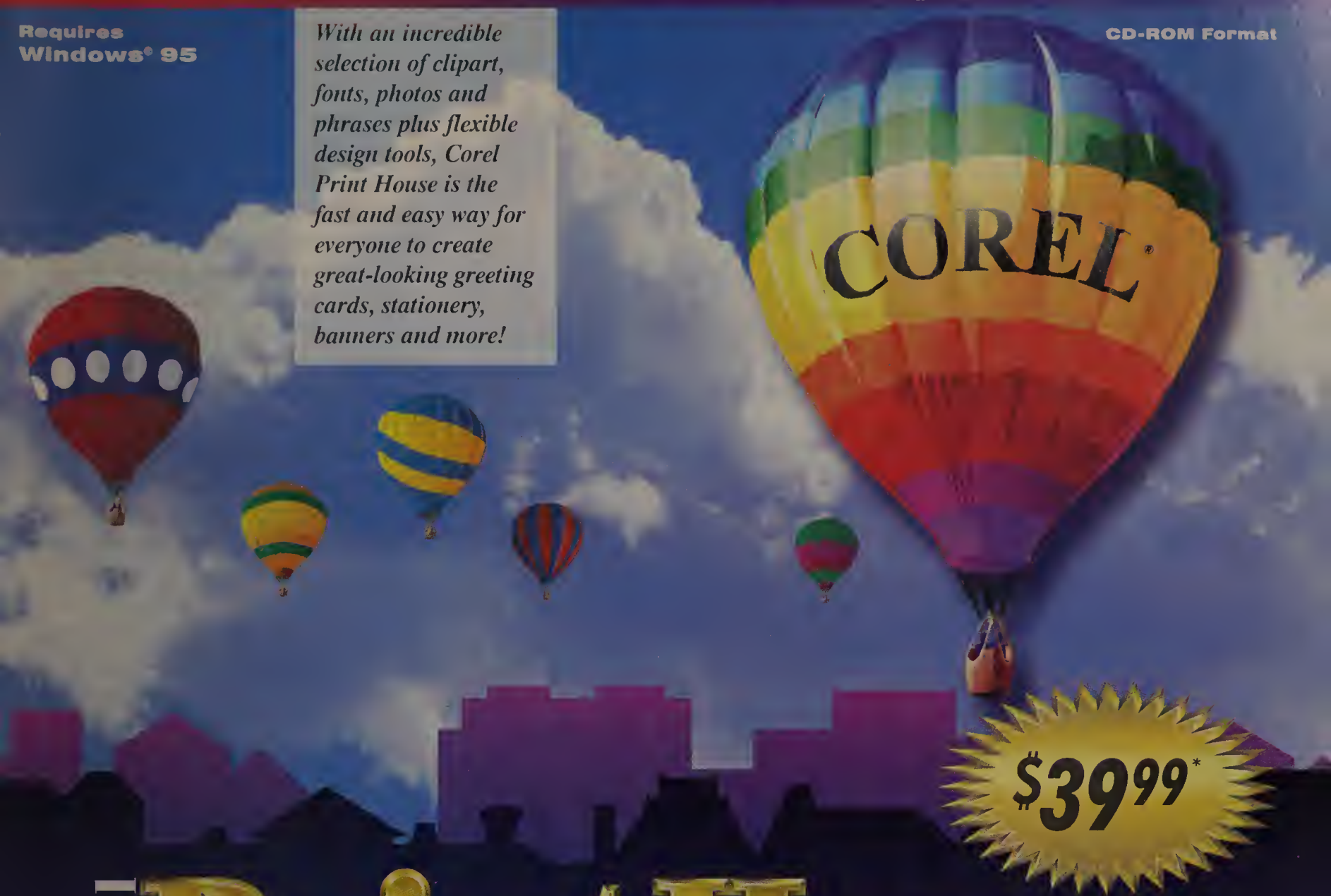
– WebAble, WebAble Design Associates..... 78

From the world leader in Windows® graphics software

Requires Windows® 95

CD-ROM Format

With an incredible selection of clipart, fonts, photos and phrases plus flexible design tools, Corel Print House is the fast and easy way for everyone to create great-looking greeting cards, stationery, banners and more!



$39.99*

Corel Print House™

- GREETING CARDS
- INVITATIONS
- CERTIFICATES
- LABELS
- ENVELOPES
- CALENDARS
- BANNERS
- BUSINESS CARDS
- LETTERHEAD
- POSTERS
- SIGNS

Plus much more!

	Corel Print House	Broderbund Print Shop® CD Ensemble™ II
Clipart	5,100	4,500
Fonts	100	73
Photos	1,000	20
Pre-designed Samples	900	503
Pre-written Phrases	1,000	200

Corel Print House—Fast! Easy! Powerful!

More great products from Corel:

ALL AGES

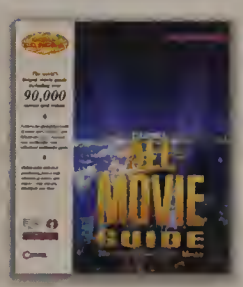
$19.99*

World's Greatest Classic Books™
Over 3,500 great literary works at your fingertips
For Windows® 3.1

ALL AGES

$19.99*

Internet Mania™
The easiest way to surf and gather information on the Internet
For Windows® 95



ALL AGES

$19.99*

All-Movie Guide™
The ultimate guide to the movies
For Windows® 95, Windows® 3.1 and Macintosh®

ALL AGES

$39.99* Each

Corel® CD HOME Super Ten Pack Series
Ten great titles in each pack for one amazing price

Circle 48 on reader service card

Enter the Corel $3,000,000 World Design Contest! (September '95 to July '96) To receive a faxed copy of the contest rules and an entry form, please call: 1-613-728-0826, ext. 3080, Document # 1125. To leave a message: 1-613-728-0826, ext. 81609. To send a fax. 1-613-728-2891

Corel and Corel Print House are either trademarks or registered trademarks of Corel Corporation in Canada, the United States and/or other countries. Microsoft and Windows are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. All other product and company names are trademarks or registered trademarks of their respective companies.

Visit any of our stores or call our nationwide toll-free number.

COMPUSA® THE COMPUTER SUPERSTORE™
1-800-COMPUSA
1-800-266-7872

KUR-0182-US

COREL®
http://www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document # 1113

*US$ plus applicable taxes.

@HOME

EDITED BY CHRISTINA WOOD

Consumer Watch

Shopping Online: What You Need to Know

BY ROBERTA FURGER

If you spend any time on the Information Highway, you're sure to have noticed that digital stores are being built at every offramp. You can buy anything—PC hardware and software, music CDs, clothing—you name it. But how how likely are you to get fleeced? In part, the answer depends on where—and how—you're shopping. Assuming you're willing to buy clothes you can't try on and computers you can't try out, you still have to worry if placing your order online would be like handing your credit card number to a crowd of unscrupulous strangers. Unfortunately, no one can tell you that shopping this way is without risk. But that doesn't mean you should skip the experience altogether.

Here are some important considerations to think about before you click on that Order Now button.

All risks aren't created equal. If you're really eager to go cybershopping, limit your risk by buying from a well-known merchant. You're also better off buying from vendors who sell their wares through one of the online services—such as America Online, CompuServe, and Prodigy—rather than over the Internet. These services are run off private networks, so your credit card transactions are more secure.

Don't be fooled by slick graphics. Creating a World Wide Web site is easy. So easy that for relatively little money anyone can set up a site and start selling goods and services. You can't always tell if the entity behind a slick home page is a legitimate outfit or a scam artist waiting to bilk you.

Don't assume your credit card information is secure. Microsoft, Visa, MasterCard, and Netscape have agreed to work together to devise a standard for secure credit card transactions, but that standard won't be in place until at least the end of the year. In the meantime, it's fairly easy for an apprentice hacker to snatch your card number and go on one heck of a shopping spree. "No one can guarantee the security of credit card transmissions," says Christine Varney, a commissioner with the Federal Trade Commission. Her advice, until the new standard is adopted: Go ahead and browse online, but phone in your orders. You may not want to take such a conservative approach, but remember that having your credit card information stolen online isn't the same as having a physical card stolen. You won't know anyone has been using your account until you get your statement.

Know who you're buying from. Don't order from a company—either by phone or electronically—without first getting its physical address and telephone number. Some online merchants include this information prominently on their home page. If you don't see it, send an e-mail message asking for the information. Be extremely suspicious of any vendor that will not tell you what its street address is.

Know the merchant's track record. This isn't always easy, but there are a few resources that can help. Once you get a business's full name and address, check out the Better Business Bureau's World Wide Web site (http:// www.bbb.org/bbb/). It includes a search feature that lets you investigate a company's track record for prior complaints. Another possibility: The FTC has its own Web site (http://www.ftc.gov/); by

JEFF BERLIN

the time you read this, it should include a list of the names of every merchant that has been charged with online fraud.

Verify the terms of the sale. Does the merchant offer a money-back guarantee? Can you return an item for full credit? Will you be charged a restocking fee? When you return an item, can you get your money back—or credit only? These are important questions to ask, since currently there are no federal regulations that govern an online merchant's return policies. The FTC's new Telemarketing Sales Rule, which went into effect on January 1, guarantees, among other things, a consumer's right to return goods for a full refund, unless the merchant states otherwise *before the sale.* The rule initially covered online sales, but that proviso was ultimately removed because of all the confusion surrounding online commerce.

Know your rights. Just like their counterparts in phone sales, online vendors must comply with the FTC's Mail Order Rule. Here's how it works: If you order a product online and are given a delivery date, the merchant must either meet that date or notify you of any delays and give you the opportunity to cancel your order. If the merchant does not specify a delivery date, it's presumed that you will receive the merchandise within 30 days. If the merchant can't deliver the goods within that time frame, you have the right to be informed and be given the opportunity to cancel your order. If an online vendor does not comply with these rules, report them to the FTC, which is keeping a close eye on cybermerchants.

Look for clues that the business may not be legitimate: The FTC cautions: "Be wary of overstated claims of product effectiveness, like 'cures or improves 27 different conditions'." Also watch out for the use of "hype titles" or frequent use of words like "hot" to describe an investment opportunity. Report any suspicious activities immediately to the following organizations: The Better Business Bureau, the FTC, and the National Fraud Information Center, which also has a Web site (http://nfic.inter. net/nfic/).

Your movements are being tracked. FTC Commissioner Varney cautions consumers to be aware that their online habits are probably being tracked and sold to marketers. So, as you're trolling around looking for deals, remember someone may be following you.

Established malls offer some protection. Although the proprietors of online malls may not vouch for all their merchants, some require member stores to comply with their basic customer service policies; this may include providing customers with a money-back guarantee on all sales made online. Check with your mall of choice to see what its policies are.

Start small. Okay, so you've done your homework. You've verified the merchant's phone number and address, checked out its track record with the Better Business Bureau, and shopped around to make sure the price is fair. But just to be safe, start with a small order and see how things go. If your merchandise arrives on time and in good condition, and the company stands behind its customer service policies, then you can feel more confident about placing a larger order the next time around.

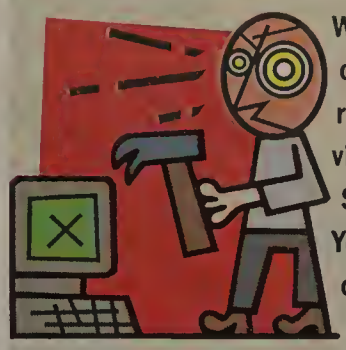
As always, you can contact Consumer Watch *with questions and problems. See page 14 for contact information.*

FTC CRACKDOWN

In a recent crackdown on online marketers, the Federal Trade Commission charged nine companies in March with making false or unsubstantiated advertising claims. Among the allegedly fraudulent businesses were several credit-repair and get-rich-at-home schemes, and U.S. Telemedia, a company advertising computer memory chips. "The Internet will not achieve its commercial potential if this new frontier becomes the Wild West of fraudulent schemes," says Jodie Bernstein, director of the FTC's Bureau of Consumer Protection.

Feedback

Not the Maytag Repairman



We received several complaints this month regarding on-site service. John Kaufman of Saratoga Springs, New York, a Gateway 2000 customer, tells us he spent 5 hours taking his computer apart, talking to technical support, and downloading drivers without getting any closer to a working machine—all on the day he received his new Pentium-based PC. Yet Gateway refused to send a technician to fix things for him. Problems with on-site service occur across the entire industry—they're not exclusive to Gateway. Even though on-site service sounds wonderfully reassuring, these technicians are not quite like plumbers or appliance repairers: They don't just show up with a box of tools to save the day. First, with the help of telephone technical support, you have to determine what ails your system. Once you have a diagnosis, the manufacturer might send a technician to do the grunt work. But usually tech support will try to persuade you to swap the parts yourself (they'll offer to express the parts to you overnight). After the diagnosis you've just done, you might feel ready to try it. Kaufman, however, was so frustrated by his experience that he returned his Pentium for a full refund.

Answer the Phone!

Nissan Boury of New York wrote to us to complain that he was unable to get technical support from Okna Corporation, makers of the personal information manager DeskTop Set. Boury had used the company's technical support for years. But recently he was unable to get through—despite trying for 24 days.

When we forwarded Boury's letter to Okna, a representative explained that when DeskTop

TAKE NOTE: Your computer can teach philosophy. The University of California Extension is offering continuing education courses through America Online (keyword: UCX), from the art of film to critical thinking.

TOP: J.D. KING; RIGHT: JAMES F. KRAUS

Cybertoys for Everyone in the House

A hungry scanner, a seedy imagination, strange connections.

his Scanpaq scanner fits easily behind the keyboard.

FEED IT AND READ IT

Messy desk? Let the ScanPaq PageDS personal scanner transform newspaper clippings, invoices, and letters into documents on your PC. After scanning pages at up to 400 dots per inch (gray scale), it performs optical character recognition on each page so you can edit, store, or fax what once would have gotten lost in the mess.

About the size of a rolled-up magazine, the device fits easily behind the keyboard and gobbles everything from business cards to legal-size sheets. Simply pop a page into the machine and it'll start up. Unfortunately, outbound paper spills out from the bottom of the scanner, bumping into your keyboard, coffee cup, and floppies. The bundled Document Center software helps you manage files, make notes, and edit images. A business card reader lets you create a database of contacts. Compared to Visioneer's $299 PaperPort Vx, the $199 Scanpaq is a bargain, but it's not as fast, and the software is less intuitive. —*John Goddard*

- **Scanpaq PageDS** $199 list; Scanpaq, Inc.; 800/335-5533. Grade: B-

Reader service no. 700

GOT MY MOJO WORKIN'

Think you have it tough? Consider Bad Mojo's Roger Samms. First his landlord caught him skipping out on the rent, then he got turned into a cockroach. In this Kafkaesque game you help poor Roger regain his humanity by scuttling around the drainpipes, baseboards, and sewers of his scuzzy apartment building. You must solve puzzles by nudging objects with your exoskeleton, while avoiding hungry rats, cats, and cans of Raid. The game's disgustingly realistic 3-D graphics and sound effects will make you want to bathe. This is one roach motel you'll want to check out. It may even help you discover the insect inside. —*Daniel Tynan*

- **Bad Mojo** $54.95 list; Pulse Entertainment; 800/264-0325. Grade: A-

Reader service no. 701

SAVE THE WORLD FROM CHAOS

What do a carburetor and a perfume bottle have in common? What about dynamite and hot air balloons? Play Connections and you'll find relationships that you'd never imagined. The universe is breaking down under the forces of chaos, and it's up to you to save it by discovering historical and scientific links between seemingly unrelated objects. You'll find these objects while solving the game's puzzles, in settings ranging from a Renaissance plaza to an Old West mining town. James Burke, host of *Connections*, a Discovery Channel TV show, introduces you to the game, then pops up occasionally for science lessons. The historical and scientific connections are interesting, but I found myself wishing

TAKE NOTE: **Consumers plan to spend $3.2 billion on software in 1996. They plan to spend only $1.47 billion on cordless telephones.** Source: Estimated by the Consumer Electronics Manufacturing Association

FEEDBACK CONTINUED

Set 5.0 was released at the beginning of 1996, the company experienced a huge spike in sales. The staff of about 30 (only 5 of whom are in the United States) couldn't handle the corresponding jump in tech support calls. A spokesperson for Okna told us that the response time is now down to about two business days (CompuServe, daily; e-mail and faxes, two to four business days; phone calls, longer). The representative points out that support is still free. Okna customers might want to try online support, which is available on CompuServe (go Okna) or at Okna's World Wide Web site (http://www.okna.com). Boury was dissatisfied with Okna's response and purchased a different PIM.

Touring the Infobahn

Hate asking for directions? Now you don't have to. Instead, use the MapQuest Web site (http://www.mapquest.com). MapQuest can tell you how to get from your home to anywhere in the United States; it can even tell you where the restaurants and ATM machines are along the way. In the future, the company would like to sell ads to businesses on the map. When that happens, you'll be able to click on the icon for that restaurant on the way home from work and get a menu or an ad, or jump to their Web site.

Armed to Buy

Looking for a reason to join the Microsoft Network? If you're in the process of buying a car, here's one: Microsoft Car Source (Go To carsource). You'll find all the info you need to cut the best possible deal: dealer invoices, incentives the dealers get from the manufacturers, and competitive comparisons on lots of new cars—as well as photos.

By Christina Wood

PHOTO: KEVIN CANDLAND; ICONS: JOHN HERSEY; ILLUSTRATION: TOP, JAMES F. KRAUS; RIGHT: J.D. KING

From the world leader in value-packed software!

Learning SERIES

Easy interactive learning on CD-ROM

Corel's Learning Series offers comprehensive training courses on CD-ROM that guide you step by step through some of the most exciting software programs on the market. Each title offers the equivalent of two days of classroom instruction, enabling you to learn a program's key features and functions quickly and easily. Best of all, the VCR-style pause, skip or repeat controls let *you* set the pace! Corel's Learning Series—bringing you the best in interactive desktop training.

For Windows® 3.1

Runs on Windows® 95

From the makers of CorelDRAW™.

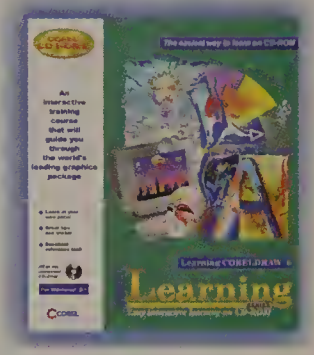
Look for other award-winning titles in the Corel® CD HOME series—more than 30 exciting entertainment, education and reference titles on CD-ROM!

KUR-0214

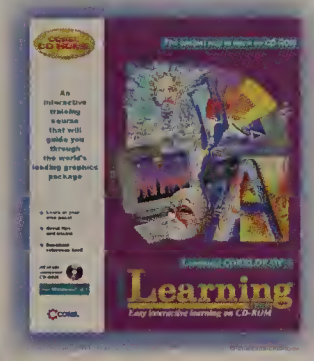
COREL® CD HOME

The best way to learn on CD-ROM!

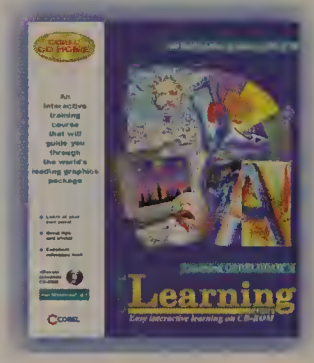
The best way to learn Windows® 95



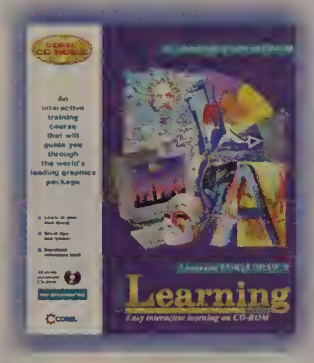
The best way to learn CorelDRAW™ 6



The best way to learn CorelDRAW™ 5



The best way to learn CorelDRAW™ 4



The best way to learn CorelDRAW™ 3

Power up! a MISCO Company

$19.95* each

1-800-851-2917

*US$ plus applicable taxes.

Circle 63 on reader service card

COREL®
http://www.corel.com
10,000,000 CD-ROMs shipped!

Enter the Corel $3,000,000 World Design Contest! (September '95 to July '96)
To receive a faxed copy of the contest rules and a [illegible] please call: 1-613-728-0826, ext. 3080, Docum[illegible] 25
To leave a message: 1-613-728-0826, ext. 8*60
To send a fax: 1-613-728-2891

Corel and CorelDRAW are either trademarks or registered trademarks of Corel Corp[illegible] in Canada, the United States and/or other countries. Windows is a registered trad[illegible] of Microsoft Corporation.

for more gameplay. —*Angela Freeman*

- **Connections: It's a Mind Game** $49.95 list; Discovery Channel Multimedia; 800/678-3343. Grade: B-

Reader service no. 702

A MUPPET INVASION

"It's time to play the music, it's time to light the lights..." If you were a devout follower of *The Muppet Show*, as I was, this game will charm the pants right off you. The opening sequence has the Muppets singing an updated version of their theme song. Then, kablooey, the disc "explodes" in your computer, flinging digitized Muppets into the depths of your system. To "fix" your PC and win the game you have to solve puzzles and find the lost Muppets. The game uses a mix of animation and video, including lots of clips from the original show. The puzzles aren't difficult, but they are—in inimitable Muppet style—goofy and filled with puns. —*Gabrielle Mitchell*

- **The Muppet CD-ROM: Muppets Inside** $39.95 list; Starwave Corp; 800/457-8646. Grade: A-

Reader service no. 703

F IS FOR FUN

Most kids' educational CD-ROMs claim to make learning fun, but how many can hold a preschooler's attention through 26 different activities in one sitting? A to Zap did just that, and mom had a pretty good time, too. Geared to three-to-six-year-olds, the disc helps kids learn basic alphabet, spelling, and word recognition skills. The premise is simple: Click on a letter block—there's one for every letter of the alphabet—and up pops a corresponding word followed by a game or animation. For example, click *M* for music and choose from six songs played on anything from a piano to a barking dog. *X* for X-ray gives you an amusing inside view of everything on screen. You can also customize the disc with your kids' favorite words. The activities are engaging, the characters are appealing, and the interface is easy enough for even the youngest user. And all the narration is done by real kids, down to the distracted humming you hear during scene changes. —*Anne Kandra*

- **A to Zap** $34.99 list; Sunburst Communications, Inc.; 800/786-3155, 914/747-3310. Grade: A

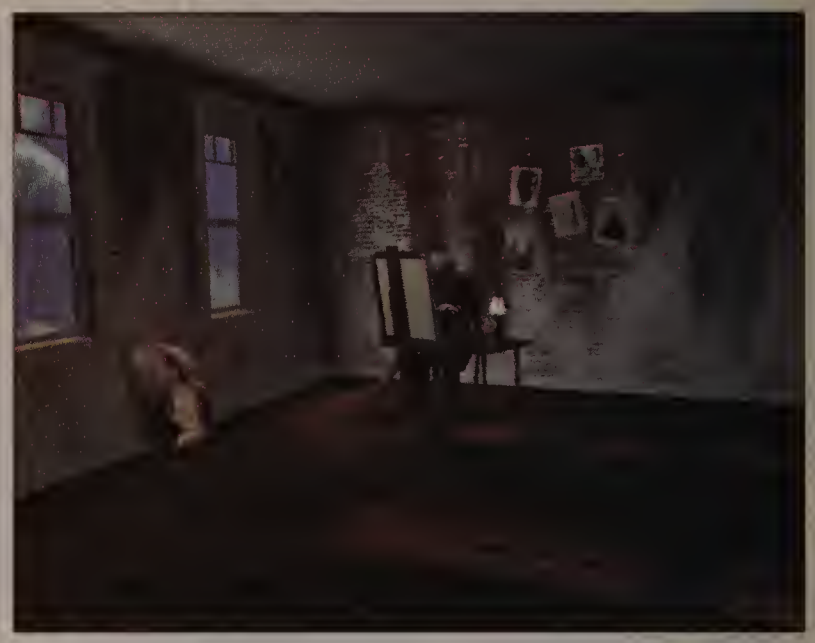
Reader service no. 704

TELLTALE ART

If wandering through a deserted Gothic mansion is your idea of fun, then try The Dark Eye. Based on four stories by Edgar Allan Poe, this CD-ROM features narration by William S. Burroughs, music by Thomas Dolby, and beautiful puppet-based animation. As you roam the mansion's 3-D rooms, you occupy the souls of various Poe characters. The mouse pointer turns into a hand, which you use to pick up or "caress" objects to reveal a snippet of a story. But the objects are so few, and the snippets so meager, it's like trying to eat soup with a toothpick. The Dark Eye is beautiful, but you may want to pull out a good book—say, a collection of Poe's stories—to read during the boring parts. —*Daniel Tynan*

- **The Dark Eye** $49.95 list; Inscape; 800/693-3253 Grade: C+

Reader service no. 705



The Dark Eye's interiors are beautiful but sparse.

TEST YOUR ARTISTRY

Playing Masterpiece Mansion is a bit like getting lost in a fabulously endowed art museum. Working your way out of the Fouffenfester Mansion provides a bounty of aesthetic rewards to counterbalance the frustration built into this educational game. Designed with grace and humor, and including an eclectic classical soundtrack, Masterpiece Mansion will challenge the casual art buff and enlighten the initiate with its visual puzzles, trivia questions, and pattern recognition and chronology matching games. In the course of play, everyone from 12-year-olds to adults can bone up on major periods and individual figures, with enough optional "routes" to make multiple return trips worthwhile. The great paintings, drawings, and sculptures aren't at their best as computer-screen representations, however, and the conventional bias toward European and American art slights the masterworks of the rest of the world's cultures. —*Derk Richardson*

- **Masterpiece Mansion** $39.99 list; Philips Media Software; 800/883-3767, 310/445-5708. Grade: B+

Reader service no. 706

DIGITAL DOG CARE

I've read easily a hundred books on dog ownership and have written one. They usually start with a short history of the dog, followed by observations on dog personality and practical tips on socialization, training, care, feeding, and grooming. Wizard of Dogs covers the ground as well as any of the books, with well-chosen graphics, additional text, a good index, plus fun games. It will get you through the problems of new dog or puppy ownership quite well.

Few, if any, general dog-care books cost $49.95, however. And the very ones cited in the bibliography section of the CD-ROM do an equivalent job without requiring that you first turn on your computer. —*Daniel Pinkwater*

- **Wizard of Dogs** $49.95 list; WildWood Interactive; 800/955-0035, 415/949-9514. Grade: B

Reader service no. 707

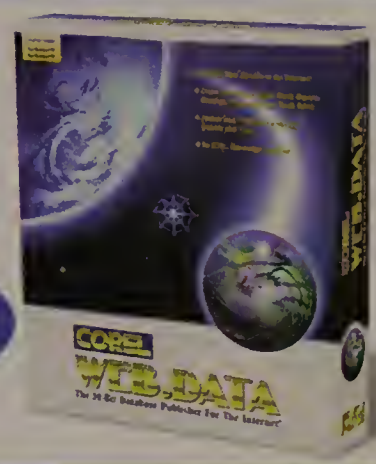
The Best Products for Internet Graphics and Publishing!

COREL WEB.DATA

The 32-bit Database Publisher For The Internet!

- Publish data directly to the Internet
- Create up-to-date online stock reports, catalogs, phone lists and much more
- Format and publish information quickly and easily
- No HTML knowledge required

$109*



For Windows®95 and Windows NT™

COREL WEB.GALLERY

Over 7,500 Internet-ready Clipart Images!

- Over 7,500 Internet-ready clipart images in GIF or JPEG formats
- Visual file manager makes it easy to preview, organize and access all of your images
- Full-color reference manual included

$75*

For Windows®3.1x. Runs on Windows®95 and Windows NT™

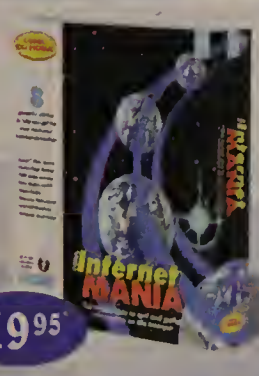
COREL Xara! / COREL Internet MANIA

Fast, Easy and Amazing 32-bit Graphics!

- Powerful and flexible vector and bitmap illustration
- Ultra-fast redraw
- Drag and drop fonts, clipart, textures and more!

For Windows®95, Windows NT™ and Windows®3.1x

$189.95*



$19.95*

The easiest way to surf and gather information on the Internet

- 8 powerful utilities
- Over 400,000 Internet site directory listings
- Home Page Author, Personal Stock Ticker, Corel FTP and more!

For Windows®95 and Windows NT™ 3.51 or higher

The Web Has Never Looked So Good!

From the makers of CorelDRAW.™

Corel, CorelXARA and Corel Internet Mania are either trademarks or registered trademarks of Corel Corporation in Canada, the United States and/or other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries

1-800-323-1809
(602) 258-2805 (fax)

BREAKTHROUGH technologies, inc.

KUR-0215-US

*US$ plus applicable taxes.

http://www.cor[illegible].com
Call now for fax[illegible] literature!
1-613-728-08[illegible] ext. 3080
Docum[illegible] # 1109

Circle 49 on reader service card

Enter the Corel $3,000,000 World Design Contest! (September '95 to July '96)
To receive a faxed copy of the contest rules and an entry form, please call 1-613-728-0826, ext. 3080, Document # 1125. To leave a message 1-613-728-0826, ext. 81609. To send a fax 1-613-728-2891

MORE PROFIT! MORE SALES! MORE CUSTOMERS!

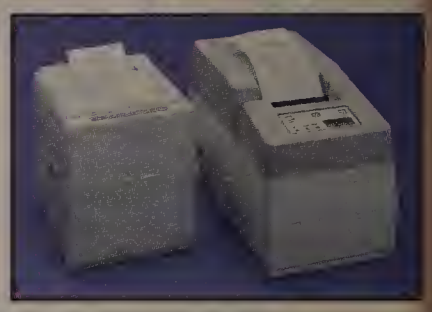
Save Time, Reduce Theft, Speed Checkout with

The General Store Retail Management System

Since 1983, **The General Store** has been the system of choice by thousands of retail and chain stores nationwide. Known for its ease of use, flexibility, and lightning speed, **The General Store** is ideal for most retail environments. At $149.95, **The General Store** starter kit offers over 250 of the most desired point of sale features. A clerk can learn to use it in minutes. Your customers are processed in seconds.

SOFTWARE

PC AMERICA
HARDWARE SOLUTIONS



Flexible Enough for Any Business

apparel/clothing/shoe
appliance
art gallery
automotive/tire
beauty salon/supply
bicycle/motorcycle
book
bridal and tuxedo
card shop/gift shop
computer
convenience/fast food
dry cleaner
eyeglass
florist
furniture
gas station
sporting goods/golf/gun
grocery/bakery
hardware/locksmith
health/fitness center
janitorial supply
lawn and garden
jewelry
liquor
mail order
marine supply
music/record and tape
nail salon
office supply/stationery
pet
pharmacy
photography
plumbing & heating
specialty stores
toy /hobby
sports cards/uniform
...and YOUR STORE!

Increase your profits by more than 25%

Computerization pays for itself, saving you thousands of dollars, giving you peace of mind, and making the best use of your time. The General Store, with over 250 of the most desired point of sale features, will help you leapfrog past your competition by controlling costs, reducing errors and increasing efficiency.

- **Quicker Checkout**-barcode scanning (50% faster than a cash register), instantaneous no wait receipt printing system, automatic credit card verification, split tender, product lookup by any word, new items added at POS
- **Increased Accuracy**-100% accurate built-in barcode scanning and printing, instant price lookup, price quotes, serial number tracking, multiple pricing levels, multi-unit pricing (i.e. 3/$1.00)
- **Reduced Theft**-cash register reconciliation, salesperson tracking, password protection, pole display sale verification, accurate inventory tracking
- **Cost Reductions**-real time inventory control, dynamic update of item sales and inventory data, reorder point alarms, extensive reporting capabilities, multi vendor P.O. selection (5 vendors per item)
- **Better Business Decisions**-detailed reports and financial statements showing the status of your business, charge account credit limit checking, parts explosion for kits tracks every inventory item, built-in general ledger, accounts receivable and accounts payable
- **Better Customer Service**-customer purchase history, complete layaway, mail list management, instant customer lookup, multiple price level support by category of customer
- **Unique Features**-powerful size/ color matrix for clothing and shoe stores, electronic scale compatibility, convenience store/gas station pump compatible, supports 99 work stations per store, multi-store ready, FREE file conversions from 32 other POS systems

FREE!
Take a FREE 30-day General Store Test Drive
(call now for details)

PC AMERICA PRICE LIST

Using another P.O.S. system? Call for **SPECIAL COMPETITIVE UPGRADE PRICE!!!!**

The General Store Professional Edition (single user, multisite ready)..... **$995.00**
The General Store Network Edition (multisite ready) **$1,495.95**
The General Store Starter Kit (abridged version)..... **$149.95**
Cash Drawer ..... ~~**$199.00***~~
Citizen Receipt Printer ..... ~~**$299.95***~~
Pole Display ..... ~~**$299.00***~~
CCD Bar Code Reader ~~**$399.00***~~
Laser Bar Code Scanner ..... ~~**$429.00***~~
*** Call for Competitive Prices**

DEALERS WANTED!
Join our new dealer program. It's **FREE**. It's the fastest way to make money...**AND** we make it **EASY**. Call now for details.

1-800-PC-AMERICA

Call Toll Free 1-800-722-6374

Phone: 914-267-3500

Circle 195 on reader service card

PC America
60 N. Harrison Ave.
Congers, NY 10920

Fax: 914-267-3550

ELIMINATE DATA ENTRY

With TELEform, The Number One Forms Processing Solution.

"Teleform has established a price/performance combination that makes it a benchmark for...ICR/forms processing products."

Imaging Mogozine 1995 Product of the Year

Reduce data entry costs and cut days from turnaround time using TELEform®, the most accurate and affordable forms processing software available.

Now for ***WIN 95/NT***, TELEform's easy-to-use interface allows you to utilize ***existing forms*** or ***create new ones***, in both paper and electronic formats. Whether you input forms via fax, scanner, Internet, or modem, TELEform offers the flexibility you need to automatically capture data into leading file formats.

TELEform reads hand print text (ICR), machine print text (OCR), optical mark recognition entries (OMR), and barcodes with the highest level of accuracy using its powerful, advanced ***Tri-CR®*** character recognition technology.

Process registration forms, sales orders, time cards, claims, surveys, and more. TELEform can handle your forms processing needs, whether your organization processes dozens or thousands of forms. Call **800-659-8755** today to order or for more information.

"Cardiff's Teleform offers the best value and highest accuracy for PC processing of faxed or scanned forms."

Americon Focsimile Associotion Best Fox Forms Processing 1995 & 1996

"Incredibly accurate and affordable forms-processing software that eliminates data entry, shortens turnaround and improves productivity...Its payback is measured in days."

Moury Kouffmon 1995 Best Fax OCR/OMR Software, Computer Telephony

"You won't find another OCR forms program with as much power and practicality as Teleform."

PC Computing

619-752-5200
Fax 619-752-5222
http://www.cardiffsw.com

Tri-CR includes technologies licensed from Advanced Telecommunications Technologies, reRecognition GmbH and others.

Come See Us At Comdex Spring Chicago - Booth #W2151

Circle 40 on reader service card

Cardiff Software

The Premier Home PC Shopping List

Five machines offering multimedia, reliability, and cool extras.

BY KIRK STEERS

A home computer has to do more than let you play spreadsheet jockey. It must run games, work reliably, provide a no-brainer setup, and make it easy for your spouse and kids to find their way around. To help you pick the right machine, we've developed the Top 5 Home PCs. Each month we'll evaluate the latest home systems, with an eye toward these demands.

This month we tested 12 home machines. We discovered right off that they don't match the speed of the business-oriented PCs in our Top 20 charts, but they compensate with great sound systems, software suites, and interfaces—plus terrific reputations for reliability and service.

HP's Pavilion 7130P—our Best Buy—sports a curvy look. It's a snap to set up, the interface is helpful, and the built-in, snapshot-size color scanner—plus EasyPhoto software—lets you quickly build a digital photo album. The preproduction unit we tested is probably slower than the PC on store shelves. This is the "family" choice.

The Micron Home MPC Pro was the fastest home machine we tested and comes with a 17-inch monitor and an Iomega Zip drive. All that hardware jacked up the price, however, and it isn't the easiest machine to assemble and use, but it's worth it. A great choice for the home office.

The Compaq Presario 9250 is a sweet combination of performance and price from a company that builds solid machines and stands by them. The built-in answering machine could nearly act as a personal secretary. Solid, if unexciting.

The Compaq Presario 9240 boasts our favorite feature: a rewritable PD-CD-ROM drive that looks like your average CD-ROM unit but works as both a 4X and a rewritable optical drive. After playing Myst, pop in a special disc (extras run around $40) and store up to 650MB. The price of this new technology pushed the 9240 to number four on the chart.

NEC's Ready 9619 focuses on multimedia, with 3-D wavetable surround sound and MPEG-1 video playback. If you have an Infrared Data Association (IrDA) laptop or printer, use the infrared transfer. The 28.8-kbps modem handles voice and data simultaneously. Neophytes will love the Merlin "video wizard" tutorial. But performance held this P-166 to number five—it ran only as fast as the P-150 Presario 9250.

Notable PCs we tested that didn't make the cut this month include Packard Bell's Platinum Pro. It looks good but was slow, and its reliability and service scores lagged. A prototype Acer Aspire, whose dark curves would look right at home on Darth Vader's desk, couldn't finish our test suite. We'll look at a shipping unit next month.

Kirk Steers is a freelance writer.

TOP 5 HOME COMPUTERS

	Price	Overall rating	Reliability/service rating	PC WorldBench score	Setup rating	Multimedia compatibility	Extra-value points	CPU	RAM (MB)	Hard drive (GB)	CD-ROM drive	Reader service number
1 Hewlett-Packard Pavilion 7130P 800/724-6631	$3098	74	82/69	126 [1]	88	100	6 [2]	P-133	16	1.6	6X	709
2 Micron Home MPC Pro 800/223-6571	$3548	73.6	78/72	194	73	95	7 [3]	P-166	16	1.2	6X	708
3 Compaq Presario 9250 800/345-1518	$2999	73.1	77/74	159	78	100	1 [4]	P-150	16	2.0	6X	710
4 Compaq Presario 9240 800/345-1518	$3298	73.1	77/74	147	78	100	6 [5]	P-133	16	1.2	4X	711
5 NEC Ready 9619 800/632-4636	$3148	72.9	72/74	159	81	100	4 [6]	P-166	16	1.6	6X	712

Test systems include a 15-inch monitor and a 28.8-kbps modem, unless otherwise noted.

For more information about all products in this article, circle reader service no. 907.

BEST BUY

[1] We tested a prototype. Shipping unit may be faster.
[2] Answering machine, image editing software, built-in color scanner.
[3] 17-inch monitor, Zip drive, Microsoft Office.
[4] Answering machine.
[5] Answering machine, rewritable PD-CD-ROM drive.
[6] Answering machine, hardware MPEG, wavetable sound, infrared data transfer.

Methodology The overall rating includes ratings for reliability and service (30 percent), price (20 percent), PC WorldBench test results (20 percent), setup (10 percent), multimedia capability (10 percent), and extra-value items (10 percent). Reliability and service ratings are based on results of PC World's Reliability and Service Monitor survey. For a description of the PC WorldBench 1.0 tests, see the Test Report in this month's system review. We gave up to 100 points for ease of setup, clarity of documentation, and quality of user interface. To derive the multimedia compatibility scores, we evaluated the installation and use of five popular multimedia titles and six applications for a maximum score of 100. Extra-value points are given for hardware and software that set a machine apart from the competition.

The Best in Interactive Medical Education

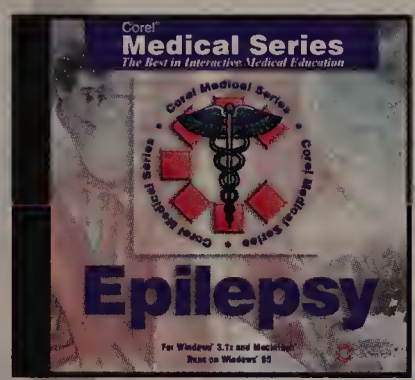
Corel® Medical Series

Epilepsy

Epilepsy is a predisposition to recurrent seizures, with various etiologies. An epileptic seizure is an abnormal and excessive focal or generalized discharge of brain neurons usually accompanied by an observable behavioral abnormality.

Epilepsy features:

- Graphic and intuitive interface
- Instructional digital videos
- Text search and retrieval
- Cut and paste capabilities for user projects
- Enlargeable illustrations and photos
- Case study
- Ability to create, customize and annotate slide shows and presentations
- Complete bibliography and reference list
- Directional questions and self-evaluation quizzes
- Medical term definitions and pronunciations



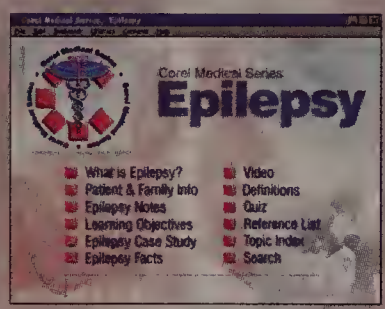
$19.99*

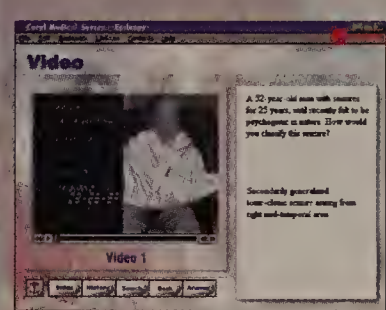
Written by a neurologist with a special interest in the field of epilepsy:
A. Guberman M.D., F.R.C.P. (C).
Professor of Neurology, University of Ottawa

The first title in the Corel Medical Series covers the topic of epilepsy from various perspectives, including pathophysiology, epidemiology, diagnosis and treatment, in a comprehensive, problem-based interactive format. This multimedia title provides a wealth of up-to-date information on this rapidly expanding area of medical research and offers in-depth analysis of all aspects of epilepsy. This indispensable CD-ROM is an invaluable resource for medical students, physicians, neurology and psychiatry residents, nurses and especially patients and their families.

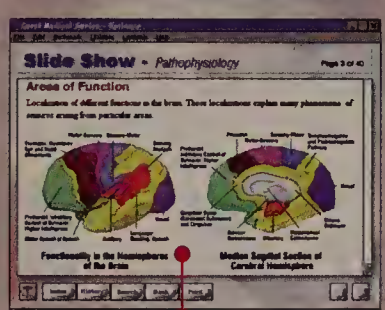
Corel's Medical Series titles are ideal for:

- Medical students
- Residents and interns
- Physicians and clinicians
- Libraries
- Nurses
- Physiotherapists
- Patients and families
- Teachers and professors
- Special interest groups

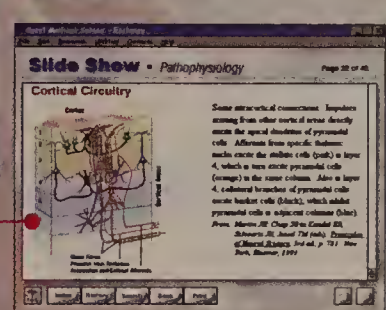


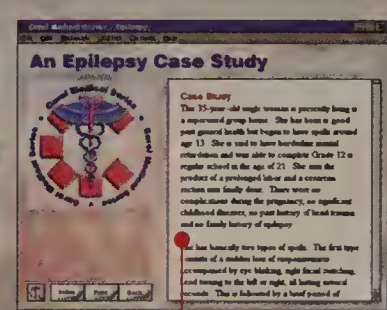


Videos
Set up as an audio-visual exercise to examine various types of seizures.



Slide Show
Includes a search feature, allowing self-navigation through all text and images.





Case Study
The real-life case study provides an overview of the typical problems associated with epilepsy.

Upcoming titles:

Speciality Topics

- Child Care CD
- Child Care Family Handbook
- AIDS and the Public
- The Amputee
- Asthma and Chronic Obstructive Lung Diseases
- Alzheimer's and Related Dementias
- Breast Feeding
- Early Parenting
- Headaches
- Arthritis
- Sleep Disorders
- Canadian Medical Association Medical Publications
- Paediatric Cardiac Anomalies
- Paediatric Renal Anomalies

Body Systems

- Special Senses
- Neurology
- Immune System
- Gastrointestinal Tract
- Mind
- Reproductive System
- Renal System
- Respiratory System
- Endocrine System
- Musculoskeletal System
- Hematology System

ATTENTION MEDICAL PROFESSIONALS!

If you are a medical professional interested in having your research material published by the world leader in CD-ROM technology, please call Corel Corporation for information on our new Medical Series product line:

1-613-728-0826 ext. 3080. Ask for Document # 1170.

TigerDirect

1-800-897-7490

*US$ plus applicable taxes.

http://www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document # 1151

KUR-0144-US

All products are trademarks or registered trademarks of Corel Corporation in Canada, the United States and/or other countries.

Circle 67 on reader service card

The Corel Medical Series Titles provide information on the topics described. The information should not be considered medical advice and is not a substitute for a consultation with a medical professional. If you have any questions regarding any of the information in the Corel Medical Series, please consult your physician.

Better Windows Through Shareware

Cool utilities that'll save you time and keystrokes.

BY STEVE BASS

If Microsoft had put everything into Windows that it should have had in the first place, a lot of people would be out of a job—and I might be one of them. Here are three wonderful shareware utilities—for Windows 3.*x* and Windows 95—that can do part of what Microsoft didn't bother doing for you.

Let's start with the best of the three: File-Ex, a low-key, unassuming utility that makes my Windows 3.*x* Open and Save dialog boxes come alive (a Windows 95 version should be available by the time you read this). For instance, if I want to open a file in Notepad that I used last week, I can go right to File-Ex's list of files recently used by the current application and by other applications. There's a similar list of recently opened directories.

File-Ex gives Windows 3.*x* dialog boxes the file management tools you thought you'd have to upgrade to Windows 95 applications to get. You can delete, rename, copy, move, and search for files, as well as create a directory—I can practically ignore File Manager. And File-Ex works with any Windows 3.*x* program that uses common dialog boxes (that's most of them), plus a few that don't, including WinWord and Excel. The Windows 3.*x* version is available on PC World Online as file-ex.zip, and the Windows 95 version will probably be available as file-ex95.

CLIP TO A SMARTER BOARD

Is Windows' Clipboard just stupid? As soon as you copy a second item to it, the first one goes to that place from which no data ever returns.

So I use SmartBoard, a Windows 3.*x* and 95 Clipboard replacement that holds a virtually unlimited number of items. Once I copy or cut text or a picture, it remains available, even after I've sent a dozen other snippets to SmartBoard. If I paste the usual way (with Edit•Paste or <Ctrl>-V), I get my most recent clip. But a hot key can always take me to SmartBoard and its growing collection. Of course, every so often I have to delete clippings to free up hard disk space. SmartBoard is available on PC World Online as smtbrd.zip.

NEVER TYPE TWICE

I'll bet you type the same things over and over. I did: my address, boilerplate paragraphs, maybe a letter closing or two. Now I use Keyboard Express, a boilerplate program for Windows 3.*x* and 95.

Keyboard Express is unobtrusive and requires no heavy lifting: Type in—or, even easier, let the program capture—some text you use all the time. When you need the text, hit a hot key and there it is.

You can call me lazy (I prefer *innovative*), but my rule is that if I type the same thing more than once, it's worth creating a macro. This column's a good example: In less than 10 seconds, I assigned 'Keyboard Express' and 'Windows 3.*x* and 95' to hot keys. No typos, no repeated keystrokes.

Granted, some programs such as Word for Windows have built-in macro features, but most don't. And for me, Keyboard Express has the edge because it's fast, easy to use, and pops up over any application. It's available as keyex.zip on PC World Online.

What about you? What's *your* favorite utility? Tell me about it at steve_bass@pcworld.com.

- **File-Ex** $25; Cottonwood Software; 75264.1630@compuserve.com, http://users.aol.com/cottonwdsw/index.html
  Reader service no. 642
- **SmartBoard** $24.95, **Keyboard Express** $24.95; Insight Software Solutions Inc.; 801/295-1890, 801/299-1781 (fax); 71672.3464@compuserve.com, http://www.smartcode.com/iss
  Reader service no. 643

PC WORLD online *The files from this article are available on PC World Online. Contributing Editor Steve Bass is a licensed marriage and family therapist and president of the Pasadena IBM Users Group. He can be reached on PC World Online.* *See page 14 for contact information.*

TALK TO US: You can e-mail the editors of the PC World @Home section at home@pcworld.com, and write to us at 501 Second St. #600, San Francisco, CA 94107. We're eager to hear your responses and opinions about any topic related to home computing.

IDG INTERNATIONAL DATA GROUP

PC World™ (ISSN 0737-8939) is published monthly at $29.90 for one year (12 issues), $59.80 for two years (24 issues), $89.70 for three years (36 issues) by PC World Communications, Inc., 501 Second St. #600, San Francisco, CA 94107. Foreign orders must be prepaid in U.S. funds with additional postage. Add $20 per year for Canada and Mexico; add $46 per year for airmail for all other countries. Canadian GST Registration #R124669680. Second-class postage paid at San Francisco and additional mailing offices. Canada Post International Publications Mail Product, (Canadian Distribution) Sales Agreement No. 0463566. POSTMASTER: Send address changes to *PC World*, Subscription Dept., P.O. Box 55029, Boulder, CO 80322-5029. Editorial and business offices: 501 Second St. #600, San Francisco, CA 94107, 415/243-0500. Copyright © 1996, PC World Communications, Inc. All rights reserved. The trademark *PC World* is owned by International Data Group and used under license by PC World Communications, Inc. *PC World Top 20*™, *Top 20*™, *PC World Top 10*™, *Top 10*™, *PC World Top 100*™, *Top 100*™, and *Consumer Watch*™ are trademarks of International Data Group, Inc., and used under license by PC World Communications, Inc. Printed in the United States.

ILLUSTRATIONS: TOP LEFT, J.D. KING; BOTTOM RIGHT, JOHN HERSEY

DELL LATITUDE

Dependable Notebooks With Superior Battery Life

DELL® LATITUDE™ XPi P120D
120MHz PENTIUM® PROCESSOR

- 10.4" Dual Scan Color Display
- 8MB RAM (40MB Max RAM)
- ★ **256KB L2 Cache**
- 540MB Removable Hard Drive (1.2GB Max)
- ★ **Smart Lithium Ion Battery with Advanced Power Management**
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
- Optional Dell Latitude DeskDock™ Station Available
- Extendable 1 Year Warranty[1]
- ★ ***Double your RAM to 16MB for only $299 more.***
- ★ ***Free Executive Attaché with purchase while supplies last.***

Business Lease: $89/Mo.
Order Code #800036

Our Pentium Chip-based Latitude XPi

$2399

ROAD TESTED.

Recently, Stephen Taylor of North Carolina accidentally backed his car over his Dell Latitude XPi notebook. Don't ask. These things happen. But as amazing as it may seem, his Dell Latitude notebook booted up immediately and sustained only minor damage. Which all leads to the moral of this incredible story: if you really want a notebook that can stand up to the daily rigors of the real world, get a Dell Latitude.

Because not only are Dell Latitude notebooks powerful and affordable. They also seem to be virtually indestructible.

intel inside pentium PROCESSOR

Designed for Microsoft® Windows®95

DELL®

TO ORDER, CALL

800-678-1490

In Canada,* call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/

Keycode #03133

REMEMBER, THE MON
COULD BE YOU

200MHz PENTIUM® PRO PROCESSOR
DELL DIMENSION XPS Pro200n

- Mini Tower Model
- 32MB EDO Memory
- 256KB Internal L2 Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95 (N.F.I.)
- Microsoft Windows NT™/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty†

★ *Upgrade to 1 year of Windows NT support for only $149 more.*

★ *Upgrade to 64MB of EDO memory for only $899 more.*

$3599

Business Lease◊: $130/Mo.
Order Code #500257

150MHz PENTIUM PRO PROCESSOR
DELL DIMENSION XPS Pro150n

- Mini Tower Model
- 16MB EDO Memory
- 256KB Internal L2 Cache
- 2.5GB Hard Drive [10.5ms]
- 15TX Trinitron Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

★ *Upgrade to 32MB of EDO memory for only $399 more.*

★ *Upgrade to a 17LS monitor (15.7" v.i.s.) for only $240 more.*

$2649

Business Lease: $98/Mo.
Order Code #500256

166MHz PENTIUM PROCESSOR
NEW DELL DIMENSION XPS P166s

- Mini Tower Model
- 16MB SDRAM Memory
- 512KB Pipeline Burst Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- AWE32 Wave Table Upgrade Card
- Altec Lansing ACS-31 Speakers
- 1.6GB/3.2GB Travan Tape Backup
- 28.8 Data/Fax Modem
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

$3479

Business Lease: $129/Mo.
Order Code #500255

166MHz PENTIUM PROCESSOR
NEW DELL DIMENSION [illegible] 166

- Mini Tower Model
- 16MB SDRAM Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 8X Multi-session EIDE CD-ROM Driv
- MS Office Professional with Bookshelf for Windows 95
- Integrated Sound Blaster 16 Sound
- Altec Lansing ACS-5 Speakers
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

Pictured System

$2549

Business Lease: $94/Mo.
Order Code #500254

133MHz PENTIUM PROCESSOR
DELL DIMENSION XPS P133c

- Mini Tower Model
- 16MB EDO Memory
- 512KB Pipeline Burst Cache
- 2.5GB Hard Drive [10.5ms]
- 17LS Monitor (15.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 6X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- AWE32 Wave Table Sound Card
- Altec Lansing ACS-31 Speakers
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

$2899

Business Lease: $107/Mo.
Order Code #500253

133MHz PENTIUM PROCESSOR
DELL DIMENSION XPS P133c

- Mini Tower Model
- 16MB EDO Memory
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- 6X Multi-session EIDE CD-ROM Drive
- MS Office Professional with Bookshelf for Windows 95
- Microsoft Windows 95/30 Days Free Support/MS Mouse
- 3 Year Limited Warranty

★ *Upgrade 32MB of EDO memory for only $399 more.*

$2199

Business Lease: $81/Mo.
Order Code #500252

100MHz PENTIUM PROCESSOR
DELL DIMENSION P100t

- Mini Tower Model
- 16MB EDO Memory
- 1.6GB Hard Drive [10ms]
- 15TX Trinitron Monitor (13.7" v.i.s.)
- 64-bit PCI 2MB DRAM Video
- 4X Multi-session EIDE CD-ROM Drive
- Microsoft Windows 95/30 Days Free Support/Dell Mouse
- 3 Year Limited Warranty

★ *Add Altec Lansing ACS-31 Speakers and a AWE32 Wave Table Sound Card for only $219 more.*

★ *Upgrade to 24MB of EDO memory for only $199 more.*

$1799

Business Lease: $67/Mo.
Order Code #500251

100MHz PENTIUM PROCESSOR
DELL DIMENSION [illegible]

- Mini Tower Model
- 8MB EDO Memory
- 850MB Hard Drive [12ms]
- 14XE Monitor (13.19" v.i.s.)
- 64-bit PCI 1MB DRAM Video
- 4X Multi-session EIDE CD-ROM Drive
- Microsoft Windows 95/30 Days Free Support/Dell Mouse
- 3 Year Limited Warranty

★ *Upgrade to 16MB of EDO memory for only $139 more.*

★ *Upgrade to a 1.6GB hard drive for only $100 more.*

★ *Add a 3Com EtherLink III Network Interface Combo Card with Parallel Tasking for only $99 more.*

$1449

Business Lease: $54/Mo.
Order Code #500250

NEW STANDARD 3 YEAR LIMITED WARRANTY WITH ALL DELL DIMENSION SYSTEMS.

‡Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., 2214 W. Braker Lane, Suite D, Austin, TX 78758. ◊Business leasing arranged by Leasing Group, Inc. ★Prices and specifications valid in the U.S. only and subject to change without notice. The Intel Inside logo and Pentium are registered trademarks of Intel Corporation. MS, Microsoft, Windows and the Windows logo are registered trademarks and Windows NT is a trademark of Microsoft Corporation. XJACK is a registered trademark of US Robotics Mobile Communications Corporation. ©1996 Dell Computer Corporation. All rights reserved.

intel inside pentium PROCESSOR

Designed f
Microso
Windows®

Y YOU SAVE
OWN.

DELL DIMENSION
Reliable PCs for High Performance Computing

133MHz PENTIUM PROCESSOR
NEW DELL LATITUDE XPi P133ST

- 11.3" SVGA Active Matrix Color Display
- 16MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 810B Removable Hard Drive (1.2GB Max)
- PCI Bus Architecture
- Smart Lithium Ion Battery with Advanced Power Management
- 128-bit PCI Graphics Accelerator, 1MB Equivalent Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- IrDA-1 Port
- Integrated 16-bit Audio
- Built-in Speaker, Stereo and Mic Jacks
- Extendable 1 Year Warranty

$4399‡
Business Lease: $158/Mo.
Order Code #800048

120MHz PENTIUM PROCESSOR
DELL LATITUDE XPi P120D

- 10.4" Dual Scan Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Removable Hard Drive (1.2GB Max)
- Smart Lithium Ion Battery with Advanced Power Management
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
- Optional Dell Latitude DeskDock™ Station Available
- Extendable 1 Year Warranty
- ★ *Upgrade to an 810MB hard drive for only $200 more.*

$2399‡
Business Lease: $89/Mo.
Order Code #800036

133MHz PENTIUM PROCESSOR
NEW DELL LATITUDE XPi P133ST

- 11.3" SVGA Active Matrix Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Removable Hard Drive (1.2GB Max)
- PCI Bus Architecture
- Smart Lithium Ion Battery with Advanced Power Management
- 128-bit PCI Graphics Accelerator, 1MB Equivalent Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- IrDA-1 Port
- Integrated 16-bit Audio
- Built-in Speaker, Stereo and Mic Jacks
- Extendable 1 Year Warranty

$3899‡
Business Lease: $140/Mo.
Order Code #800047

75MHz PENTIUM PROCESSOR
DELL LATITUDE XPi P75D

- 10.4" Dual Scan Color Display
- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Removable Hard Drive (1.2GB Max)
- Smart Lithium Ion Battery with Advanced Power Management
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
- Optional Dell Latitude DeskDock Station Available
- Extendable 1 Year Warranty
- ★ *Double your RAM to 16MB for only $299 more.*

$1999‡
Business Lease: $74/Mo.
Order Code #800044

BUILD PERFORMANCE WITH THESE OPTIONS.

DELL DIMENSION	ADD
1.6GB/3.2GB Travan Tape Backup	$249
3 Year Next-business-day, On-site Service	$99
28.8 Fax/Modem	$149
Win95 Mechanical Keyboard	$29
3Com EtherLink III Network Interface Card	$79

DELL LATITUDE	ADD
1.2GB Hard Drive (Upgraded from 540MB)	$400
24MB RAM (Upgraded from 8MB)	$699
Advanced Port Replicator and DeskDock Station	$229
28.8 XJACK®/Cabled Modem	$259
External Dell 4X CD-ROM	$359

DIRECT NEWS ON THE INTERNET
For free updates on Dell's product offerings, pricing and other news electronically, send an email message to "DirectNews-request@dell.com." Please use the word "subscribe" as the body of your message.

DELL®

TO ORDER, CALL
800-678-7686
In Canada,* call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/

Keycode #03134

DELL DIMENSION
Reliable PCs For High Performance Computing

DELL DIMENSION™ XPS P166s
166MHz PENTIUM® PROCESSOR

- Mini Tower Model
- ★ **16MB SDRAM Memory**
- 256KB Pipeline Burst Cache
- 1.6GB Hard Drive [10ms]
- 15LS Monitor (13.7" v.i.s.)
- 9FX Motion Graphics Accelerator with 2MB VRAM
- ★ **8X Multi-session EIDE CD-ROM Drive**
- MS® Office Professional with Bookshelf for Windows® 95
- Integrated Sound Blaster 16 Sound
- Altec Lansing ACS-5 Speakers
- Microsoft® Windows 95/30 Days Free Support/MS Mouse
- ★ **3 Year Limited Warranty†**
- ★ ***Upgrade to the Dell 17LS monitor (15.7" v.i.s.) for only $270 more.***

Business Lease◊: $94/Mo.
Order Code #500254

The New Dell Dimension XPS P166s

$2549

GET THE MOST INCREDIBLE MEMORY EVER.

(JUST TO BE SAFE, WRITE DOWN OUR PHONE NUMBER.)

It's the memory of the future: Synchronous Dynamic RAM (SDRAM to you). And this new Dell Dimension XPS has it. Finally, your PCs won't be held back by the limitations of asynchronous EDO memory. Finally, with everything tied to the same clock, you can get smooth, predictable performance at astonishing speeds. Finally, you can have a hedge against obsolescence. And, the technology once reserved for high-end workstations can be on your desktop. So check out the specs, limber up your dialing finger and give us a call. Come to think of it, maybe you should tie a string around that finger first.

Dell's featured computer artist is Diane Fenster of Pacifica, CA.

DELL®

TO ORDER, CALL
800-666-1480
In Canada,* call 800-839-0148
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT • http://www.dell.com/
Keycode #03132

intel inside pentium PROCESSOR

Designed for Microsoft® Windows®95